FACULTY OF HEALTH SCIENCES

School of Medicine

Prospectus 2015

UNAM
UNIVERSITY OF NAMIBIA

SCHOOL OF MEDICINE

UNAM
UNIVERSITY OF NAMIBIA

NOTE

This Prospectus is only valid for 2015 as regulations and syllabi may be amended for 2015. The general regulations and further information appear in the General Information and Regulation Prospectus.

Although the information contained in this Prospectus has been compiled as accurately as possible, it is possible that errors and omissions have inadvertently occurred, for which we apologise in advance. The University reserves the right to amend any regulation or stipulation without notice. The information is correct up to 30 November 2014.

The fact that particulars of a specific module or programme have been included in this Prospectus does not necessarily mean that the module or programme will be offered in 2015.

This Prospectus must be read in conjunction with the *General Information and Regulations Prospectus 2015*.

UNIVERSITY OF NAMIBIA FACULTY OF HEALTH SCIENCES
STRUCTURE AND PERSONNEL

OFFICE OF THE DEAN

Dean & Founding Dean School of Medicine	Prof P Nyarango
Associate Dean School of Nursing and Public Health	Dr K Hofni
Associate Dean School of Medicine	Prof P O Odonkor
Associate Dean School of Pharmacy	Prof T Rennie
Deputy Associate Dean SONPH (Windhoek)	Dr L van der Westhuizen
Deputy Associate Dean SOPHN (Oshakati)	Dr H Udjombala
Deputy Associate Dean SOM	Dr J Sheehama
Deputy Associate Dean SOM: Clinical Affairs	Dr K Shangula
Deputy Associate Dean School of Pharmacy	Dr V Haakuria
Campus Administrator	Ms O Haludilu
Faculty Officer	Ms L Prinsonsky
Faculty Officer	Ms F Mario
Secretary	Mrs L Muraranganda
Secretary	Ms I Isaaks
Examination Officer	Ms G Lawrence
Examination Officer	Ms P Van Wyk
Administrative Officer	Mr F Katjiruru
Field Officer	Mr J Hamalwa
Security Officer	Mr E Sinifwa
ICT Officer	Mr M Esterhuizen

General enquiries regarding the school of Medicine and the qualifications offered by the School should be directed to:

Ms F Mario The Faculty Officer School of Medicine University of Namibia Private Bag 13301 WINDHOEK	Ms L Prinsonsky The Faculty Officer School of Nursing and Public Health University of Namibia Private Bag 13301 WINDHOEK
Telephone: +264-61-2065015 Fax: +264 61- 2065093 E-mail: fmario@unam.na	+264-61-2063828 +264-61-2063922 lprinsonsky@unam.na

Matters regarding specific subjects and departments should be addressed to the relevant Head of Department.

CONTENTS

NOTE 3

STRUCTURE AND PERSONNEL 4

SCHOOL OF MEDICINE PREAMBLE 6

ACADEMIC DEPARTMENTS 9

PROGRAMMES 12

UNDERGRADUATE PROGRAMME OBJECTIVES 12

CURRICULUM FOR THE BACHELOR OF MEDICINE AND BACHELOR SURGERY MBChB 15

STUDENT ADMISSION 15
COMMITTEE ON ADMISSIONS 15
ADMISSION CRITERIA 15
ADMISSION REQUIREMENTS 15
ESSAY WRITING 16
UNAM EVALUATION SCALE: 16
DURATION OF STUDY 17
EXEMPTIONS: 17

CURRICULUM REQUIREMENTS 17

BASIC STRUCTURE OF THE DEGREE 17
EXAMINATION REGULATIONS 17
ACADEMIC ADVANCEMENT RULES 17

CURRICULUM STRUCTURE 19

THE SYLLABI 21

UNAM CORE MODULES 21
MBChB MODULES 22

SCHOOL OF MEDICINE PREAMBLE

The mission of the School of Medicine is to produce health professionals whose knowledge, professional skills, and practice in medicine are in tune with the needs of society (practice patterns, and scientific advancements). The School shall provide a learning environment conducive to the pursuit of professional competence by health workers, while providing quality services to the community and undertaking relevant translational research for enhancement of health. The School will continually strive for the establishment of training programs in a wide spectrum of health disciplines and lending support to the human resource development initiatives of the country, including post-graduate education of physicians and scientists. The School is mandated to prepare graduates for the medical degree of the University of Namibia.

The key objectives of the School of Medicine are:

- To promote equity of access to health care services for all;
- To promote affordable health care service delivery by strengthening health care systems which are sustainable, cost-effective, efficient and culturally relevant and acceptable;
- To institute measures to counter major health risks including the prevailing communicable diseases;
- To develop academically and professionally qualified medical doctors in sufficient numbers for manning various health care delivery systems;
- To contribute to the development of a national health care system that is capable of providing a fully comprehensive range of preventive, curative and rehabilitative health care that is cost-effective, sustainable and acceptable to the recipients of such health care services;
- To conduct research directed to the health care needs of the Namibian society at large, and which is instrumental in ensuring quality health care service delivery.

SCHOOL OF MEDICINE OATH

All (Students and Faculty):

We pledge to serve our patients, their families, our community and each other with respect, competence, compassion, and humility. We hold as our ideal to care and treat all of our patients. From them we will learn. We hold as our ideal the advancement of knowledge. Through it disease will be understood, prevented and cured. We hold as our ideal open-minded collaboration. To this we are collectively committed.

We hold as our ideal critical self-evaluation. Through this we will grow.

Faculty:

We, your faculty, promise to serve as worthy role models, as our own teachers have before us.

Students:

We, your students, recognize the excellence and commitment of those from whom we learn.

Faculty:

We promise to support your personal and professional growth, in health care settings, in the laboratory, in the community, and through your own teaching.

Students:

We promise to pursue responsibly our calling to patient care, to service, and to research.

Faculty:

We promise to maintain an environment where scientific integrity and ethical standards sustain your trust in us.

Students:

We commit ourselves to the highest standards of academic honesty, scientific integrity and ethical practice as students and in our professional lives.

All (students and faculty members):

We honor The University of Namibia, the Medical Board and our Government's history of service to the people of this nation. We accept the challenges and opportunities of those alumni whom we follow. We vow to be professional, punctual and courteous. We vow to honor and respect life on earth, in all forms, crawling and reasoning, with intellect or with handicap, to be ambassadors of healthy living and a prosperous future. We vow to take to heart and mind that all men are created equal. We vow to uphold this pledge and our assistance to others who do the same.

ACADEMIC CALENDER

FIRST SEMESTER

08 January	**-**	**University Opens**
12 January	**-**	**Lectures commence for 1st Block** (5th year MBChB Students)
19 January	-	Registration: Schools of Medicine and Pharmacy students (Senior Students)
20 January	**-**	**Lectures commence for 1st semester** (Senior Students)
20 January	-	ODS: General Orientation (1st Year Students)
26 January	-	Registration: Schools of Medicine and Pharmacy students (1st year students)
27 January	**-**	**Lectures commence for 1st semester** (1st year students)
27- 29 January	-	General Orientation: Schools of Medicine and Pharmacy (1st Year Students)
13 February	-	White Coat Ceremony (1st year students)
15 February	-	Lectures end for 1st Block (5th year MBChB students) (5 Weeks)
16 February	-	**Lectures commence for 2nd Block (5th year** MBChB **Students)**
22 March	**-**	Lectures end for 2nd Block (5th year MBChB students) (5 Weeks)
23 March	-	**Lectures commence for 3rd Block (5th year** MBChB **Students)**
30 March	-	*Easter Break Starts*
07 April	-	**Lectures resume after Easter Break**
26 April	-	Lectures end for 3rd Block (5th year MBChB students) (5 Weeks)
27 April	-	**Lectures commence for 4th Block (5th year MBChB Students)**
12 May	**-**	Lectures End for First Semester (Senior Students) (**16 weeks**)
19 May	-	Regular Examination Commence Senior Students
22 May	**-**	Lectures End for First Semester (1st Year Students) (**16 weeks**)
26 May	-	Regular Examination Commence (1st Year Students)
01 June	**-**	Regular Examinations end (Senior Students)
07 June	-	Lectures end for 4th Block (5th year MBChB Students)
15 June	**-**	**COBES Starts (3rd year students)**
15 June	**-**	**Lectures commence for 4th year MBChB students**
08 June	-	Regular Examinations end (1st Year Students)
17-19 June	-	Special /Supplementary examinations (1st, 2nd and 4th Year Students)
10 July	-	**COBES ends (3rd year students) - 4 weeks**

SECOND SEMESTER

15 June	-	**Lectures commence for 1st Block (5th year** MBChB **students)**
13-15 July	-	Special /Supplementary examinations (3rd Year Students)
13 July	-	Lectures commence for 2nd Semester
19 July	**-**	Lectures end for 1st Block (5th year MBChB students) (5 Weeks)
20 July	-	**Lectures commence for 2nd Block (5th year** MBChB **students)**
23 August	**-**	Lectures end for 2nd Block (5th year MBChB students) (5 Weeks)
24 August	-	**Lectures commence for 3rd Block (5th year** MBChB **students)**
24 August	-	Spring Break Starts
31 August	-	Lectures resume after Spring Break
27 September	**-**	Lectures end for 3rd Block (5th year MBChB students) (5 Weeks)
28 September	-	**Lectures commence for 4th Block (5th year** MBChB **students)**
09 October	-	Lectures end for 2nd semester (**16 weeks**) (4th MBChB years)
14 October	-	Regular Examinations Commence for 2nd semester (4th year MBChB Students)
27 October	**-**	Regular Examinations end for 2nd semester (4th year MBChB Students)
28 October	**-**	**COBES commence (4th year Students)**
01 November	**-**	Lectures end for 4th Block (5th year MBChB students) (5 Weeks)
06 November	-	Lectures end for 2nd semester (**16 weeks**)
09 November	-	Regular examinations for 5th Year MBChB Students commence
11 November	-	Regular examinations for 2nd semester commence (1st, 2nd and 3rd Year Students)
20 November	-	Regular examinations for 5th Year MBChB Students end
25 November	-	Regular examinations for 2nd semester end
26 November	**-**	**COBES ends (4th year Students)**
30 Nov-01 December	-	Special/Supplementary Examinations (Years 1-3)
25-27 November	**-**	**Supplementary examinations for 5th Year MBChB Students**
30 Nov- 01December	-	Special/Supplementary Examinations (4th year MBChB Students)
07 December	-	Elective Studies start (3rd & 4th year students)
01 January 2016	-	Elective Studies end (3rd & 4th year students)

DUE DATES FOR THE 2014 ACADEMIC YEAR

(i) GENERAL

Last day for application of retention of continuous assessment mark & Promotion Exam ..... 06 Feb
Last day for application for exemption(s) ..... 06 Feb
Last day for Late Registration (*Late fee payable*) ..... 11 Feb
Last day for approval of exemption(s) ..... 11 Feb
Last day for approval of retention of continuous assessment mark & Promotion Exam ..... 11 Feb
Last day for approval of module(s) & qualification changes ..... 11 Feb
Last day to change Examination Centres at Regional Centres (Semester 1 modules – Regular & Supplementary /Examinations) ..... 28 March
Last day to submit outstanding documentation ..... 21 Aug
Last day to change Examination Centres at Regional Centres (Semester 2 &
Last day to cancel enrolment ..... 25 Sept

(ii) CANCELLATIONS

Semester 1 modules
Last day to cancel Semester 1 modules ..... 08 May

Semester 2 modules
Last day to cancel Semester 2 modules ..... 25 Sept
Double modules (A double module normally extends over one academic year)
Last day to cancel Double modules ..... 25 Sept

(iii) FINANCE

Semester 1 modules
Last day to cancel with 100 % credit ..... 06 March
Last day to cancel with 50 % credit ..... 17 April

Semester 2 modules
Last day to cancel with 100 % credit ..... 07 August

Last day to cancel with 50 % credit ..... 28 August

Double modules (a double module normally extends over one academic year)
Last day to cancel with 100 % credit ..... 06 March
Last day to cancel with 50 % credit ..... 05 June

ACADEMIC DEPARTMENTS

DEPARTMENT OF ANATOMY

☎ (+264 61) 2065010 💻 (+264 61) 2065090 ✉ Private bag 13301, Windhoek, Namibia

Head of Department:	Prof W Vorster
Associate Professor	Prof W Vorster BSc University of Stellenbosch; BSc (Hons) University of Stellenbosch; MSc University of Stellenbosch; PhD University of Stellenbosch; TDPE University of Stellenbosch
Associate Professor	Prof J H T Smit BMedSc University of Orange Free State; BMedSc Hons UOFS; MMedSc UOFS; PGCHET Queens University Belfast; FHEA (UK); MIAS London.
Lecturer	Dr M M M Morkel BSc (Hons) University of Western Cape; MBChB University of Stellenbosch; DOH University of Stellenbosch
Lecturer	Dr A Du Plessis MBChB University of Stellenbosch; DCH College of Medicine, South Africa.

DEPARTMENT OF BIOCHEMISTRY

☎ (+264 61) 2065023 💻 (+264 61) 20645090 ✉ Private bag 13301, Windhoek, Namibia

Head of Department:	Prof I Quaye
Professor:	Prof I Quaye, PhD Medical Biochemistry/Cell&Molecular Biology), Ryukyus School of Medicine, Japan; M.Phil Biochemistry, University of Ghana; B Sc (Hons) Biochemistry, University of Ghana.
Lecturer:	Dr. J A Sheehama, PhD Biology (Medical Microbiology and Medical Biochemistry) Kazan State University; Masters in Biology (Microbiology and Molecular Biology) Kazan State University
Lecturer:	Dr J Misihairabgwi, PhD (Biochemistry) University of Zimbabwe; BSc (Hons) (Biochemistry); University of Zimbabwe
Lecturer:	Mr E Nepolo, PhD (Molecular Biology) University of Namibia; MSc (Applied Molecular Biology); University of Namibia; BSc (Molecular & Physiological Biology); University of Namibia
Technologist	Vacant
Technician	Vacant

DEPARTMENT OF COMMUNITY MEDICINE

☎ (+264 61) 2065012 💻 (+264 61) 2065090 ✉ Private bag 13301, Windhoek, Namibia

Head of Department:	Prof L Barongo
Associate Professor:	Prof L Barongo, Doctor of Medicine (MD) University of Dar es Salaam; M.Med Internal Medicine University of Dar es Salaam; Advanced Diploma in Epidemiology (DLSHTM) London School of Hygiene and Tropical Medicine; MSc University of London
Lecturer:	Dr. M Goraseb, M Public Health Oklahoma Univ. USA; Med Degree Silisian Med School Poland
Lecturer:	Dr L N Lukolo, PhD Nursing Science (Community Health) University of Namibia; Masters in Nursing Science (Community Health) University of Stellenbosch SA; BNSc (Hons) in Nursing Education and management, University of Namibia; BNSc (Nursing Education and Management) University of Namibia; Diploma in Nursing (General Nursing, Community Health, Psychiatric and Midwifery) University of Namibia; Certificate in Nursing science (Enrolled Nurse) Onandjokwe Lutheran Hospital, Namibia
Lecturer:	Dr Mitonga Kabwebwe Honoré, *BSC Stat., MPH, PhD*; BSc (Hons) in Statistics at Higher Institute of Statistics – Lubumbashi, DR CONGO; Master Degree in Public Health, University of Lubumbashi – DR CONGO PhD (Public Health), University of Lubumbashi – DR CONGO
Lecturer:	Ms H Zaire, MSc Epidemiology Wageningen University; BSc. Animal Science University of Namibia

DEPARTMENT OF INTERNAL MEDICINE

☎ (+264 61) 2065023 💻 (+264 61) 2065090 ✉ Private bag 13301, Windhoek, Namibia

Head of Department:	Prof CJ Hunter
Professor:	Prof H Hodgson, Doctor of Medicine (MD) Oxford University
Professor:	Prof J J R Kumwenda, FRCP London; MSc (Infectious Diseases), University of London; MBChB University of Nairobi.
Associate Professor:	Prof CJ Hunter, Doctor of Medicine (MD) Loma Linda University School of Medicine; PhD (Physiology) Loma Linda University, United States of America
Lecturer:	Vacant

DEPARTMENT OF MICROBIOLOGY

☎ (+264 61) 2065018 💻 (+264 61) 2065090 ✉ Private bag 13301, Windhoek, Namibia

Head of Department:	Dr J Ojulong
Senior Lecturer:	Mr M Hedimbi, BSc (Biology and Chemistry), UNAM; MSc (Applied Microbiology), UNAM
Lecturer	Dr. J A Sheehama, PhD Biology (Medical Microbiology and Medical Biochemistry) Kazan State University; Masters in Biology (Microbiology and Molecular Biology) Kazan State University
Lecturer:	Dr J Ojulong, (M. Med. Microbiology-Makerere University Kampala), MBChB-Makerere University Kampala
Lecturer:	Dr B Kahler, Dr.med.vet, FU Berlin; Dipl. Librarian, FU Berlin

DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY

☎ (+264 61) 2065023 💻 (+264 61) 2065090 ✉ Private bag 13301, Windhoek, Namibia

Head of Department:	Dr K L Charles
Lecturer:	Specialized obstetrician/Gynaecologist: MBChB Mbarara University of Science and Technology, Uganda; MMed (Obstetrics & Gynaecology) Makarere University, Uganda;
Lecturer:	Dr El-Tagoury, Specialized obstetrician/Gynaecologist

DEPARTMENT OF PAEDIATRICS

☎ (+264 61) 2065026 💻 (+264 61) 2065090 ✉ Private bag 13301, Windhoek, Namibia

Head of Department:	Vacant
Lecturer:	Dr F Sinyinza, BSc(Human Biology), University of Zambia, School of Medicine; MBCHB, University of Zambia, School of Medicine; Masters of Medicine (Paediatrics & Child Health),University of Zambia, School of Medicine

DEPARTMENT OF PATHOLOGY

☎ (+264 61) 2065010 💻 (+264 61) 2065090 ✉ Private bag 13301, Windhoek, Namibia

Head of Department:	Prof W Vorster
Lecturer:	Dr L Aleksenko, MBChB, Kharkiv Medical State University, Ukraine, FWACP

DEPARTMENT OF PHYSIOLOGY

☎ (+264 61) 2065009 💻 (+264 61) 20645090 ✉ Private bag 13301, Windhoek, Namibia

Coordinator:	Prof CJ Hunter

Professor:	Prof P O Odonkor BSc (Hons) University of Ghana; MBChB University of Ghana; PhD McGill University Canada
Associate Professor:	Prof CJ Hunter, Doctor of Medicine (MD) Loma Linda University School of Medicine; PhD (Physiology) Loma Linda University, United States of America
Lecturer:	Ms J Nelongo, BSc (Hons) University of Namibia; BTech (Biomedical Technology), Cape Peninsula University of Technology
Lecturer:	Mr M van der Merwe, BSc (Hons) North-West University, South Africa

DEPARTMENT OF PSYCHIATRY AND BEHAVIOURAL SCIENCES
☎ (+264 61) 2065023 💻 (+264 61) 2065090 ✉ Private bag 13301, Windhoek, Namibia

Head of Department:	Vacant
Lecturer	Dr Veii

DEPARTMENT OF RESEARCH AND INSTITUTIONAL DEVELOPMENT
☎ (+264 61) 2065023 💻 (+264 61) 2065090 ✉ Private bag 13301, Windhoek, Namibia

Head of Department:	Vacant
Lecturer:	Vacant

DEPARTMENT OF SURGERY
☎ (+264 61) 2065020 💻 (+264 61) 2065090 ✉ Private bag 13301, Windhoek, Namibia

Head of Department:	Prof M Labib
Professor:	Prof M Labib, MBChB, University of Ain Shams, Egypt; M Med Urology, University of Ain Shams, Egypt; FCS (ECSA), College of Surgeons of East, Central and Southern Africa (COSECSA); FRCS (Ed), Fellowship of Royal College of Surgery Edinburgh, Scotland
Senior Lecturer	Dr C B Mbangtang, MBBS; DA; MMed (Surg); FRCS (Edin); FCS (ECSA); FICS
Senior Lecturer	Dr Alex Van der Horst, MBChB University of Cape Town, FC Orth (SA)
Lecturer:	Vacant

REGULATIONS

The regulations should be read in conjunction with the General Information and Regulations prospectus

PROGRAMMES

Bachelor of Medicine and Bachelor of Surgery 15BMCH

UNDERGRADUATE PROGRAMME OBJECTIVES

At the end of the training, the graduate is expected to demonstrate the following professional skills and characteristics:

1. **Altruistic and professional skills.**

The graduate should:

i. Be caring, compassionate, and respectful to the privacy and dignity of patients and families.
ii. Apply ethical standards in every medical practice.
iii. Have honesty, reliability, and integrity in all interactions with patients, families, colleagues, and all others with whom the physician interacts in all professional dealings.
iv. Be sensitive to the needs and concerns of others, always aware of the limitations of their understanding of health and illnesses as well as material possessions.
v. At all times advocate for patients over one's own interests.
vi. Be effective in communicating with and gaining cooperation from patients, professional colleagues and other health members of the community.
vii. Be aware of potential threats from conflicts between one's medical profession and own interests.
viii. Have the respect for other members of the health team and collaborate with others in caring for patients, their families, population groups, and the community.
ix. Apply logical and probabilistic approach to clinical and other health problems as well as to dealing with uncertainty and ambiguous situations.
x. Be able to obtain clinical history, write accurate clinical records, and carry out tasks medical graduates are required to handle during internship and post-graduation engagements.

2. **Scientific knowledge as a basis for medicine**

The graduate should be able to grasp:

i. Normal structure and function of the body, every organ and system.
ii. Molecular, biochemical, and cellular mechanisms that are important in maintaining the body's homeostasis.
iii. The various causes (genetic, developmental, metabolic, toxic, microbiologic, autoimmune, neoplastic, degenerative, traumatic, psychological and environmental factors) of diseases and the ways they operate (pathogenesis).
iv. Altered structure and function (pathology and pathophysiology) of the body and its major organ systems that are seen in various diseases and conditions.
v. The power of scientific method in establishing the causation of diseases and the efficacy of traditional and non-traditional therapies.

3. **Critical reasoning and evidence based practice in clinical and health situations (Translational research)**

With regard to individual, population, or community medicine and health, the graduate should be able to:

i. Precisely define a health problem, state the required information to solve the problem, efficiently search for the information, and select the best and most appropriate investigative approach.
ii. Apply the techniques, procedures, goals and results of biomedical research, including laboratory research and population or community-based studies.
iii. Interpret results of clinical and laboratory tests, in terms of their likely contribution to diagnosis, prognosis, and management of health problems and evaluating the validity of such tests.
iv. Interpret and evaluate data generated by studies of medical and other health services provided to communities.
v. Assess the degree to which assertions made in medical journals and lay press is based on scientific evidence.
vi. Disseminate the findings from biomedical research through print media, electronic media, scientific conferences and other public forums with a view to reaching the most in need for the benefits from the study;
vii. Integrate the findings from research into the practice of medicine, the management of healthcare delivery services and health policy development;

viii. Design advocacy strategy which is relevant to the societal needs and is a direct outcome of the evidence from the research;

4. Identification, prevention, and management of illness.

The graduate should be able to:

i. Apply knowledge on biological, psychological, behavioral, social, developmental, and environmental factors in the diagnosis, management, and prevention of illnesses.
ii. Obtain an accurate medical history, covering all essential aspects of age, gender, environmental, and socio-economic status.
iii. Perform a complete and organ system-specific examination, including mental status assessment.
iv. Plan and interpret a program of investigations appropriate to the clinical problem at hand with due regard to patient comfort, safety, and economic factors.
v. Assess the significance and limitations of the findings of standard laboratory tests and investigations.
vi. Evaluate information obtained from 4(i)-4(v) in making diagnosis on a range of clinical problems
vii. Apply principles of therapeutics, including complications and human costs of treatment, in the management of a defined range of health conditions
viii. Take responsibility in the management of a defined range of common, acute, chronic, intractable, and terminal clinical conditions and community health problems.
ix. Apply principles and techniques of behavior formation and behavior change communication and counseling in the diagnosis, prevention, treatment, and management of a defined range of clinical conditions and health problems of individuals and populations.
x. Perform primary health care category surgical interventions in emergency and life-saving situations
xi. Carry out the basic psychomotor tasks required of medical students to perform during their professional lives.

5. Population medicine and dutiful to society.

The graduate should be able to:

i. Apply the knowledge on biological and non-biological determinants of illness and health and determine the economic, social, cultural, and psychological factors that contribute to the development and/or continuation of diseases.
ii. Apply the knowledge on the epidemiology of common health problems in any given Namibian community and carry on systematic approaches to reducing and/or eliminating the incidence and prevalence of health problems in the country.
iii. Identify factors that place individuals at risk for diseases or injury, select appropriate tests in examining individuals at risk for specific diseases, and determine the strategies in responding appropriately.
iv. Evaluate health care needs of individuals, groups, and communities and the efficacy and quality of healthcare provision services.
v. Assess the impact of illness upon families and the importance of family factors in the prevention, treatment, and rehabilitation of patients.
vi. Apply positive, consistent, and informed approaches to the promotion and maintenance of health as well as prevention of illnesses both at the individual and population levels.
vii. Engage in the behavior change of the individual, the family, and the community in promoting the health of the population in relation of the environment.
viii. Identify the role of a physician as a member of a team and work cooperatively within a team.

6. Self- directed and life-long learning.

The graduate should be able to:

i. Assess his/her learning needs, develop self-directional objectives and device appropriate means to meet those objectives.
ii. Find, retrieve, and use biomedical information from electronic databases, media, and other technologies and resources.
iii. Monitor his/her progress in acquisition of information and skills.
iv. Interact with professional colleagues to monitor and evaluate one's performances
v. Critically evaluate the School's educational program
vi. Recognize that medical education is a lifelong learning process, invest time and other resources in furthering own knowledge and skills, and seek for higher professional achievements.

7. Participation in and management of change.

The graduate should be able to:

i. Assess the relevancy, efficacy, quality, cost-effectiveness, and sustainability of health service provisions in a community;

ii. Evaluate health policies and community participation in health service development and provisions;
iii. Identify appropriate medical practices, new paradigms, and factors that contribute to effective, efficient, sustainable, and equitable health service provisions;
iv. Carryout stakeholder analysis and mobilize resources essential in improving health as well as in implementing and managing changes in health practices;
v. Implement, monitor, and evaluate the outcome as well as the impact of new and innovative approaches to health service provisions.

8. Administration and management of health service provisions.

The graduate should be able to:

i. Apply appropriate management practices in the administration of health services at health facilities in a community, district and region;.
ii. Carryout participatory health needs assessment at the community, community, district and region levels;
iii. Carryout analysis of strengths, weaknesses, opportunities, and threats of healthcare management systems;
iv. Develop strategies and objectives as part of a comprehensive plan for health service interventions in a community, district and region.
v. Device a logical health service-planning framework for a proper presentation and management of a health plan.
vi. Assess the organization and management systems at the community, district and regional levels.
vii. Develop a budget and mobilize resources in support of health service activities and interventions.
viii. Implement, monitor, and evaluate the execution of a Plan of Action.

THE 5 + 2 STAR- DOCTOR

The School of Medicine aspires to produce a medical graduate with the following qualities and characteristics herein referred to as the 5 + 2-Star Doctor[1].

- Care Provider
- Decision-maker
- Communicator
- Community Leader
- Manager
- Researcher
- Life-long Learner

[1]The concept of the 7-Star Doctor is adapted from the WHO definition of a 5-Star Doctor (Boelen C, 1996). The stakeholder workshop 2008 identified researcher and life-long learner as additional competencies for the Namibian doctor.

CURRICULUM FOR THE BACHELOR OF MEDICINE AND BACHELOR SURGERY MBChB

COURSE CODE: 15BMCH

STUDENT ADMISSION

COMMITTEE ON ADMISSIONS

Admission to the School of Medicine shall be administered by a Committee on Admissions, which shall be composed of members of the School, a community member, the Administrative Officer in charge of admissions to the School, and the Registrar of the University. The School on consultation with the Vice-chancellor shall nominate a community member to sit on the admissions committee. All committee members shall be appointed by the Dean for three (3) years and may be reappointed for additional terms. The Committee shall have the authority to select students entering the School on condition that they fulfill the minimum admission requirements as set out below. The School shall exercise the responsibility of reviewing the requirements for admissions and recommending any revisions to Senate for approval.

ADMISSION CRITERIA

Admission to the School of Medicine is based on the applicant's academic standing (see admission requirements below), essay writing skills, letters of recommendation, and a successful interview. All admissions are made collectively by the Committee on Admissions and must be approved by the Faculty Board of the School of Medicine, as well as the Registrar's Office.

ADMISSION REQUIREMENTS

(i) To apply for the MBChB degree, a candidate must be enrolled in Grade 12 studying towards a NSSC certificate or in possession of a NSSC certificate or any other equivalent qualification with at least

a) **35 points on** the UNAM scale with at least a **grade B** in English ***OR* 37 points** on the UNAM scale with at least a **grade C** in **English**

b) **A Score of "2"** or better on higher level in **Mathematics** and **Physical Sciences** (or a **2** in Mathematics and a **3** in Physical Science) (or a **2** in Physical Science and a **3** in Mathematics) **OR** a **grade B** or better on ordinary level for **Mathematics** and **Physical Sciences**

c) Grade **B** or better on ordinary level for **Biology/Life Science**

(Please refer to the scale used by the University to calculate the UNAM score);

OR

(ii) To apply for the MBChB degree, a candidate must have successfully completed the entire first year BSc curriculum and must have passed **in Mathematics, Chemistry and Physics modules** with an aggregate of at least 60%;

OR

(iii) To apply for the MBChB degree, a candidate must have successfully completed a relevant and applicable qualification from a recognized higher institution"

(iv) Mature Entry: Candidates aspiring for admission to the MBChB degree through the Mature Age Entry Scheme must satisfy the following conditions:

a. They should be at least 25 years old on the first day of the academic year in which admission is sought
b. They should have successfully completed senior secondary education
c. They should have proof of at least five years relevant work experience (as determined by the School).
d. They should pass all papers of the prescribed Mature Age Entry Tests and obtain a minimum aggregate score of 60%.
e. Candidates, who, in the opinion of the Faculty, merit further consideration, may be called for an oral interview before the final selection is made.

ESSAY WRITING

An applicant shall be required to submit an essay on a topic or topics determined by the Admissions Committee of the School of Medicine. (The main objective of an essay so demanded of an applicant, besides evaluating one's writing skills and ability of formulating thoughts, is to have some sense of the candidate's potential as a health service provider).

INTERVIEWS

Eligible applicants shall normally be invited for interviews to be conducted by the Admissions Committee. Face to face interviews shall be conducted in order to assess the following attributes of the candidates:

1) **Academic standing:** An interview shall seek to determine the candidate's academic competitiveness plus communication skills;
2) **Extra-curricular activity:** An interview shall also look into the candidate's records on extra-curricular activities and, if applicable, in job performances. Extra-curricular engagements in civic and community works shall be examined. Direct patient-care experience can be helpful but not essential.
3) **General awareness and sense of values:** A candidate's awareness of the community he/she lives in and the sense of values, sensitivities, and concerns he/she might have on social and cultural issues shall be assessed.
4) **General physical/mental condition of the aspiring student:** The candidate's overall physical and mental status will be made without conducting a formal medical examination.

Meeting the above student admission criteria **DOES NOT** necessarily ensure admission. Admission is granted on merit based on availability of places on the programme and other conditions that may be determined from time to time.

ADMISSIONS PROCESS OF THE MBChB DEGREE

- The closing date for applications will be 30 August with no provision for late applications
- Applicant will be informed by e-mail or telephone about the topic of the essay and the due date for the submission of the essay. Essays will be submitted by e-mail or in person.
- Interviews will be held during the second week of October.
- Final selection will be done during the last week of October.
- The final list of provisional admitted students will be available by the end of the 2nd week of November
- Candidates will be informed in writing of their applications status by the Faculty Officer
- A candidate who has reasonable grounds to appeal must do so in writing to the faculty officer on or before 30 November.

The admissions process **will not be re-opened** and a waiting list will be kept to choose from in the case of provisionally admitted student not turning up for registrations the following year.

UNAM EVALUATION SCALE:

	NSSC		**CAMBRIDGE**		**SENIOR CERTIFICATE**		**GCE**	
POINTS	**H**	**O**	**HIGCSE**	**IGCSE**	**HG**	**SG**	**A-level**	**O-level**
10							A	
9	1		1		A		B	
8	2	A*	2	A*	B		C	
7	3	A	3	A	C	A	D	A
6	4	B	4	B	D	B	E	B
5		C		C	E	C	N/O/Subsidiary	C
4		D		D	F	D		D

3		E		E		E		E
2		F		F		F		F
1		G		G				G

DURATION OF STUDY

The minimum duration for the Bachelor of Medicine and Bachelor of Surgery (MBChB) degrees is five years. The MBChB degrees must be completed within seven (7) years of full-time study unless there is an exceptionally motivated reason.

EXEMPTIONS:

UNAM will give exemptions for equivalent modules taken at other tertiary institutions but the exemptions shall not exceed 50% of the modules in the MBChB degree program. An application for exemption from (a) module(s) must be accompanied by documentary proof issued by the examining body concerned that the student has passed the relevant module (not older than 5 years).

CURRICULUM REQUIREMENTS

BASIC STRUCTURE OF THE DEGREE

The curriculum for the degrees of Bachelor of Medicine and Bachelor of Surgery degrees (Medicinae Baccalaureus et Chirurgiae Baccalaureus) MBChB consists of five years of Medicine training spread over 10 semesters.

The 10 semesters of the MBChB degrees have been structured using the UNAM degree format, while satisfying accreditation requirements of the Medical and Dental Professions Council of Namibia. At the UNAM School of Medicine, a semester is made up 16 weeks of lectures and 2 weeks of examinations, resulting in an 18 week semester. For each semester that a module is offered at 3 lecture hours plus 2 hours of tutorial/laboratory practical (or 4-8 hours of practice) per week for 16 weeks, 16 credits will be accumulated. The total number of credits for the degree is 1048.

EXAMINATION REGULATIONS

For detailed examination and promotion rules see the General Information and Regulations Prospectus. The Continuous Assessment Mark (CA mark) will count 60% towards the final mark while the examination mark will contribute 40%. A candidate will be eligible to write the examination if he/she has obtained a Continuous Assessment Mark of 50%. However, the regular UNAM regulations will apply to the 4 UNAM core modules.

At the end of each semester there shall be a written, practical/clinical and/or oral examination which shall contribute to the 40% to the final examination mark. A team of examiners shall administer the oral and clinical examinations at the end of every semester.

In the clinical years (years 3-5) students are required to pass the clinical examination in addition to passing the written examinations. Students who pass the written component of the examination but do not pass the clinical examination/practical examinations are deemed to have failed the module.

A student who fails less than 3 modules of the prescribed modules for a specific year will be eligible for a supplementary examination if he/she obtained between 45 and 49% in the final mark subject to the subminimum rule. The supplementary examination shall be conducted within 4 weeks (but not less than 48 hours) of the release of the final examination results.

University thresholds for Supplementary Examination, Repeating the Year and Discontinuation apply.

ACADEMIC ADVANCEMENT RULES

FIRST YEAR TO SECOND YEAR OF MEDICINE

A student must have passed at least 10 of the prescribed First Year modules (160 credits) to register for Second Year modules. If any of the failed modules is a pre-requisite for a Second Year module, the student cannot register for the affected Second Year module until the pre-requisite is passed.

SECOND YEAR TO THIRD YEAR OF MEDICINE

A student must have passed **ALL** the prescribed First Year modules. In addition, the student must have passed at least 11 of the prescribed Second Year modules (368 credits). If any of the failed modules is a pre-requisite for a Third Year module, the student cannot register for the affected Third Year module until the pre-requisite is passed.

THIRD YEAR TO FOURTH YEAR OF MEDICINE

A student must have passed **ALL** the prescribed First Year and Second Year modules. In addition, the student must have passed at least 13 of the prescribed Third Year modules (624 credits). If any of the failed modules is a pre-requisite for a Fourth Year module, the student cannot register for the affected Fourth Year module until the pre-requisite is passed.

FOURTH YEAR TO FIFTH YEAR OF MEDICINE

A student must have passed all the prescribed modules up to the Fourth Year (960 credits).

MINIMUM REQUIREMENTS FOR RE-ADMISSION

A student will not be re-admitted into the School of Medicine if she/he has not earned:

- At least 80 credits by the end of the first year (at least 5 modules for Year 1)
- At least 256 credits by the end of the Second year (10 modules of year 1 plus 6 modules of Year 2)
- At least 472 credits by the end of the Third Year (All modules of Year 1, plus 11.5 modules of Year 2 and 6 modules of Year 3)
- At least 728 credits by the end of the Fourth Year (All modules of Year 1 and 2, plus 13 modules of Year 3, plus 6 modules of Year 4)
- At least 880 credits by the end of the Fifth Year (All modules of Year 1,2,3, plus 11 modules of Year 4, plus 2 modules of Year 5)
- At least 1016 credits by the end of the Sixth Year (All modules of Year 1,2,3,4 plus 8 modules of Year 5)

GRADUATION

A student can ONLY graduate with a Bachelor of Medicine and Bachelor of Surgery if she/he has passed the entire prescribed modules (1136 credits) of the program.

CURRICULUM STRUCTURE

The curriculum of the MBChB is made up of the following components:

YEAR 1					
SEMESTER 1					
Module Title	**Code**	**NQF Level**	**Credits**	**Hrs**	**Pre/Co requisites**
English for Academic Purposes	ULEA3519	5	16	4	
Computer Literacy	UCLC3509	5	8	2 + 1P	
Anatomy I	MBSA3511	5	16	3 + 4P	
Behavioral Sciences I	MBSC3511	5	16	3 + 2P	
Biochemistry I	MBSB3511	5	16	3 + 3P	
Physiology I	MBSP3511	5	16	3 + 2P	

SEMESTER 2					
Module Title	**Code**	**NQF Level**	**Credits**	**Hrs**	**Pre/Co requisites**
Contemporary Social Issues	UCSI3580	5	8	2	
Community Medicine I	MCMC3612	6	16	3+ 1P	
Anatomy II	MBSA3512	5	16	3+ 4P	
Behavioral Sciences II	MBSC3512	5	16	3 + 2P	
Biochemistry II	MBSB3512	5	16	3+ 2P	
Physiology II	MBSP3512	5	16	3 + 2P	

SEMESTER 1 & 2					
Module Title	**Code**	**NQF Level**	**Credits**	**Hrs**	**Pre/Co requisites**
COBES 1	MBCC3620	6	16	4P	
TOTAL CREDITS			**192**		

YEAR 2					
SEMESTER1					
Module Title	**Code**	**NQF Level**	**Credits**	**Hrs**	**Pre/Co requisites**
Anatomy III	MBSA3531	5	16	3+ 4P	
Behavioral Sciences III	MBSC3531	5	16	3 + 2P	
Biochemistry III	MBSB3531	5	16	3+ 2P	
Community Medicine II	MCMC3631	6	16	3+ 2P	
Medical Imaging I	MCMI3521	5	8	2 + 2P	
Medical Microbiology I	MPCM3631	6	16	3 + 2P	
Physiology III	MBSP3631	6	16	3 + 2P	

SEMESTER 2					
Module Title	**Code**	**NQF Level**	**Credits**	**Hrs**	**Pre/Co requisites**
Pathology I	MPCA3732	7	16	3 + 2P	
Internal Medicine I	MCMM3732	7	16	3 + 4P	
Medical Microbiology II	MPCM3632	6	16	3 + 2P	MBSB3531
Independent Research Studies I	MCMR3732	7	16	4P	
Community Medicine III	MCMC3632	6	16	3 + 2P	
Pharmacology I	MCMP3732	7	16	3 + 2P	Pre –MBSP3631 MBSB3531 Co- MPCP3732 MPCM3631 MCMM3732
Family Medicine I	MBSF3532	5	16	3+ 2P	

SEMESTER 1 & 2					
Module Title	**Code**	**NQF Level**	**Credits**	**Hrs**	**Pre/Co requisites**
COBES 1	MBCC3620	6	8	4P	
TOTAL CREDITS			**232**		

YEAR 3					
SEMESTER 1					
Module Title	**Code**	**NQF Level**	**Credits**	**Hrs**	**Pre/Co requisites**
Family Medicine II	MBSF3551	5	16	3 + 2P	
Community Medicine IV	MCMC3651	6	16	3 + 2P	
Internal Medicine: II	MCMM3751	7	16	3 + 8P	
Medical Microbiology: III	MPCM3651	6	16	3+ 2P	
Pathology II	MPCA3751	7	16	3 + 2P	
Pharmacology II	MCMP3751	7	16	3 +2 P	**Pre –**MBSP3631 MBSB3531 **Co-** MPCP3732 MPCM3631 MCMM3732

SEMESTER 2					
Module Title	**Code**	**NQF Level**	**Credits**	**Hrs**	**Pre/Co requisites**
Family Medicine III	MBSF3652	6	16	3+ 2P	
Anesthesiology I	MCMA3752	7	16	3 + 2P	
Obstetrics & Gynaecology I	MCMO3852	8	16	3 + 8P	
Paediatrics I	MCMT3852	8	16	3 + 8P	
Surgery I	MCMS3752	7	16	3 + 8P	
Professional Ethics I	MCMB3642	6	8	2	

SEMESTER 1 & 2					
Module Title	**Code**	**NQF Level**	**Credits**	**Hrs**	**Pre/Co requisites**
Independent Research Studies II	MCMR3730	7	16	4P	

FIELD WORK (2 X 4 weeks)*					
Module Title	**Code**	**NQF Level**	**Credits**	**Hrs**	**Pre/Co requisites**
COBES II	MBCC3759	7	16	35P	
Electives I	MPCE3759	7	16	35P	
TOTAL CREDITS			**248**		

*- Means 2 consecutive units of 4 weeks each

In 3rd year students will be on rotation in Internal Medicine II, Obstetrics & Gynaecology, Paediatrics I and Surgery I. During 3rd year a student will spend 4 hours every second day in the ward between 18h00 and 22h00 = 16 hours of practice. Final Examinations in Community Medicine, Medical Microbiology, Pathology and Pharmacology only.

YEAR 4					
SEMESTER 1					
Module Title	**Code**	**NQF Level**	**Credits**	**Hrs**	**Pre/Co requisites**
Psychiatry I	MCMY3771	7	16	3 +4P	
Surgery II	MCMS3771	7	16	3 +8P	
Obstetrics & Gynaecology II	MCMO3871	8	16	3 + 8P	
Paediatrics II	MCMT3871	8	16	3 + 8P	
Family Medicine: IV	MBSF3771	7	16	2	

SEMESTER 2					
Module Title	**Code**	**NQF Level**	**Credits**	**Hrs**	**Pre/Co requisites**
Psychiatry II	MCMY3772	7	16	3 + 4P	
Surgery III	MCMS3772	7	16	3 + 8P	
Anaesthesiology II	MCMA3772	7	16	3 + 4P	
Internal Medicine III	MCMM3772	7	16	3 + 8P	
Medical Imaging II	MCMI3562	5	8	2 + 2P	

SEMESTER 1 & 2					
Module Title	**Code**	**NQF Level**	**Credits**	**Hrs**	**Pre/Co requisites**
Independent Research Studies III	MCMR3750	7	32	4P	

FIELD WORK (2 X 4 weeks)*

Module Title	Code	NQF Level	Credits	Hrs	Pre/Co requisites
COBES III	MBCC3779	7	16	35P	
Electives II	MPCE3779	7	16	35P	
TOTAL CREDITS			**216**		

* - Means 2 consecutive units of 4 weeks each

In 4th year students will be on rotation in Psychiatry II, Obstetrics & Gynaecology, Paediatrics II and Surgery II.
During 4th year a student will spend at least 4 hours per day for at least 4 days a week in the ward between 18h00 and 22h00 = >16 hours of practice

YEAR 5					
SEMESTER 1 & 2					
Module Title	**Code**	**NQF Level**	**Credits**	**Hrs**	**Pre/Co requisites**
Independent Research Studies IV	MCMR3870	8	32	3 + 2P	
Internal Medicine IV	MCMM3870	8	32	3+ 32P	
Obstetrics and Gynaecology III	MCMO3870	8	32	3+ 32P	
Paediatrics III	MCMT3870	8	32	3+ 32P	
Surgery IV	MCMS3870	8	32	3+ 32P	
TOTAL CREDITS			**160**		

In 5th year students will be on rotation in Internal Medicine IV, Obstetrics & Gynaecology III, Paediatrics III and Surgery IV (Blocks). Clinical Examination at the end of the academic year.

THE SYLLABI

UNAM CORE MODULES

COMPUTER LITERACY — UCLC3509

NQF Level 5
Contact Hours 2L + 1P/Week
Credits 8
Assessment Continuous 60%; Examination 40% (1 x 2 hour paper)
Pre-requisites None

Content: Understanding computer systems and technology: The problem-solving approach. Structure and components of a modern computer - processor, memory, hard drives, disk drives, interfaces. The Windows environment. **Principles of information processing:** word-processing, spreadsheets, presentations, databases, nature and use of software. **Practical exercises**: Use of MS Word, Excel, PowerPoint. Communication using email, Overview of Internet.

CONTEMPORARY SOCIAL ISSUES — UCSI3580

NQF 5
Contact Hours 2 Contact hours per week for 14 weeks
Credits 8
Assessment Continuous 100%
Prerequisite None

Module Description:
The module raises awareness on the need for a personal, national and global ethics. The main objective of the course is to help students reflect on the social moral issues; to discover themselves in a learner-centered, contextual, and religious and life related setting. It also stimulates students' critical thinking and helps them to appreciate their values, standards and attitudes. Furthermore it orientates students with regards to the epidemiology of HIV/AIDS; the prevalence of the disease in Namibia, Africa and Internationally. It also informs students on the psycho social and environmental factors that contribute to the spread of the disease, the impact of HIV/AIDS on their individual lives, family and communities at large. The unit further seeks to enhance HIV/AIDS preventive skills among students by means of paradigm shift and behaviour change and

also to impart general introductory knowledge on gender, to make students aware, as well as sensitize them towards gender issues and how they affect our society, Sub-Region and continent at large.

ENGLISH FOR ACADEMIC PURPOSES **ULEA3519**

NQF level 5
Contact hours 4 Contact hours per week for 14 weeks
Credits 16
Assessment Continuous 60%; Examination 40% (1 x 3 hour paper)
Prerequisites None

Module Description:
This module develops a student's understanding and competencies regarding academic conventions such as academic reading, writing, listening and oral presentation skills for academic purposes. Students are required to produce a referenced and researched essay written in formal academic style within the context of their university studies. Students are also required to do oral presentations based on their essays. The reading component of the course deals with academic level texts. This involves students in a detailed critical analysis of such texts. The main aim is therefore, to develop academic literacy in English.

MBChB MODULES

ANATOMY

This course administered over three consecutive semesters, is designed to start with basic structure and increase in depth with horizontal integration with physiology, and the advancement to cover the clinical application of anatomical principles to health and disease states. The modules are designed to focus on concepts and details of human anatomy and anatomical terminologies and acquaint students with the structures of the locomotive apparatus: the skeletal and muscular systems as well as the structures of the human body in relation to normal and abnormal processes of pregnancy, defects in fetal development and the external factors that interfere with the basic mechanisms of tissue morphogenesis are discussed. The additional focus of this module is on the structure and function of the cells and tissues of the human body. Students will be introduced to histological techniques essential in the identification and characterization of cells and tissues, normal histological characteristics of cells, tissues, and organs of the nervous, endocrine, and reproductive systems, and reviews the pathological changes that manifest in disease situations. Cell models, and where appropriate cadavers tissue histological slides, and electronic photomicrographs will be used and examined using the optic microscope.

ANATOMY I **MBSA3511**

NQF level: 5
Contact Hours 3 Lecture hours per week + 2 hours of tutorial (or 3 hours of practice)
Credits: 16
Assessment: 60% Continuous assessment 40% Examination (1 x 3 hours written paper + 1½ practical examination)
Pre-requisites None

Module Description
BASIC HUMAN HISTOLOGY: This course aims to provide a general introduction to cells, the structure of the developing human, as well as the histology of the resulting main tissue types. An overview will be provided to levels of organization of the human body which ranged from cells to organ systems. The primary focus will be structural embryology with emphasis on human reproduction, gametogenesis, fertilization, gastrulation and the derivatives of the three germ layers. Furthermore, the development of the placenta will also be studied and a general introduction to congenital defects and embryopathies will be provided. In addition, this course will also provide an introduction to the four basic tissue types namely, epithelium, connective tissue, muscle and nervous tissue. Histological slides will be used to examine tissues in context.

ANATOMY II **MBSA3512**

NQF level: 5
Contact Hours 3 Lecture hours per week + 2 hours of tutorial (or 3 hours of practice)
Credits: 16
Assessment: 60% Continuous assessment 40% Examination (1 x 3 hours written paper + 1½ practical examination)
Pre-requisites None

Module Description

SYSTEMIC ANATOMY: The second module in anatomy will expose students to morphological and functional characteristics of the various organs and organ-systems of the human body. This module builds on the basic concepts that were acquired during the study of human development and the four basic tissue types. Both the macro and micro-anatomy of the human body systems will be scrutinized. Emphasis will be placed on the histology of the eye, ear, skin, circulatory system, nervous system, lymphoid system, gastrointestinal tract, gastrointestinal tract glands, respiratory system, urinary system, andrological and female reproductive systems and endocrine system. Relevant clinical anatomy will be studied in conjunction. This will be achieved through the evaluation of case studies related to each system and use of relevant medical technology. Students will also be exposed the morphological alterations and their manifestations in the normal variant and pathological states. Histological slides will be used to examine the various organ systems as well as their tissue constituents.

ANATOMY III **MBSA3531**

NQF level:	5
Contact Hours	3 Lecture hours per week + 2 hours of tutorial (or 3 hours of practice)
Credits:	16
Assessment:	60% Continuous assessment 40% Examination (1 x 3 hours written paper + 1½ practical examination)
Pre-requisites	None

Module Description

GROSS ANATOMY: This module will employ a regional approach to human anatomy with the integration of clinical anatomy and medical imaging. Human osteology will be integrated into the subject matter. Cadaver dissection will be used as a teaching aid. The regions of interest will be the thorax, abdomen, pelvis, lower limb, upper limb, back, the head and neck, as well as neuroanatomy. In addition, Clinical aspects will also be integrated through the use of relevant case studies and medical imaging. This module also aims to equip students with a macroscopic understanding of the structure of the human body in health and disease and requires the integration of system human anatomy. The relationship of the various tissues, organs and systems will be scrutinized.

ANESTHESIOLOGY

Anaesthesia for medical students is a course designed to acquaint a student with the essential knowledge on the subject and gain practical experience necessary to be competent in safely administering local, regional and general anaesthesia. The course prepares the doctor to select and independently manage inhalational, anaesthetic for a patient who does not suffer from metabolic disorder or condition(s) that may lead to complications or require specialist anaesthesiologist. The newly graduating doctor will be able to manage anaesthesia during emergency, routine surgical procedures and during postgraduate studies special in the subject. The course is given in two modules but a student is given sufficient time during the fourth and final year of study to accumulate the requisite experience.

ANESTHESIOLOGY I **MCMA3752**

NQF:	7
Contact Hours:	3 Lecture hours and 2 hours of practice per week
Credits:	16
Assessment:	60% Continuous assessment 40% Examination (1 X 3 hours written)
Pre-requisite:	None

Module Description

INTRODUCTION TO ANAESTHESIA: This course reviews the physiology and anatomy of the respiratory, cardiovascular and hematological systems as well as the pharmacology of drugs used for anesthesia. Students grasp physics of gas, fluid mechanics; compliance, blood gas and haemoglobin dissociation. A student is expected to be acquainted with pre-operative preparation of the patient and family, the choice of drugs for induction, intravenous and inhalational anaesthesia; monitoring during anesthesia; complications of anaesthesia particularly, apnoea. Topics: Gass laws , fluid mechanics, elasticity laplace law, Sterling law, thermodynamics as they relate to gasses: anatomy and physiology respiratory system including concepts of shunting, dead space and compliance; the cardiovascular system: pulse, rate, rhythm, contractility, preload and afterload; the pharmacology of drugs used for local anaesthesia, regional and inhalational anaesthesia, pain management; interpretation of blood gas analysis results. During this module a student will be introduced to practical aspects in the use of local anaesthesia. This course integrated with general surgery and obstetrics and gynaecology.

ANESTHESIOLOGY II **MCMA3772**

NQF: 7
Contact Hours: 3 Lecture hours and 2 hours of practice per week
Credits: 16
Assessment: 60% Continuous assessment 40% Examination (1 X 3 hours written)
Pre-requisite: None

Module Description
ANAESTHESIA PRACTICE: This course discusses the practice of anaesthesia in different settings (new-born, infancy, childhood adulthood, the aged and under different medical conditions). A student shadows an anaesthesiologist, in conducting pre-operative assessment and pre-medication, during induction, in-tubation and monitoring during operation theatre procedures, ex-tubation and post-operation monitoring. The student will gain experience in administering all forms of anaesthesia. Topics: Pre-operative evaluation; fluid management; massive transfusion; invasive hemodynamic monitoring; sedation; recovery room management; post-operative nausea and vomiting; critical care medicine; assisted respiration; pain management; anesthesia during pregnancy and labour; anesthesia for cardiac; neurosurgery, ear nose and throat surgery; anesthesia neuropharmacology; adverse drug reaction, coagulation and coagulopathy; anesthesia during infancy, childhood and the aged; ultra sound guided vascular techniques. A student will satisfactorily perform all the listed practical procedures in the Anaesthesia log.

BEHAVIORAL SCIENCE

The focus of these three modules is on the interaction between society and health. The objective is to examine how social life has an impact on morbidity and mortality rate, and vice versa. The sociology of health and illness covers sociological pathology (causes of disease and illness), reasons for seeking particular types of medical aid, and patient compliance or noncompliance with medical regimes. Health, or lack of health, was once merely attributed to biological or natural conditions. Sociologists have demonstrated that the spread of diseases is heavily influenced by the socioeconomic status of individuals, ethnic traditions or beliefs, and other cultural factors. This topic requires a global approach of analysis because the influence of societal factors varies throughout the world. This will be demonstrated through discussion of the major diseases of each continent. These diseases are sociologically examined and compared based on the traditional medicine, economics, religion, and culture specific to each region. There are obvious differences in patterns of health and illness across societies, over time, and within particular societies. There has historically been a long-term decline in mortality within industrialized societies, and on average, life-expectancies are considerably higher in developed, rather than developing or undeveloped, societies. Patterns of global change in health care systems make it more imperative than ever to research and comprehend the sociology of health and disease. Continuous changes in economy, therapy, technology and insurance can affect the way individual communities view and respond to the medical care available. This course is organised into 3 hours didactic lectures, tutorials and 4 hours of family and urban health centre attachment (COBES I).

BEHAVIORAL SCIENCE I **MBSC3511**

NQF: 5
Contact Hours: 3 lecture hours + 2 hours of practice
Credits: 16
Assessment: 60% Continuous assessment 40% Examination (1 x 3 hours written paper)
Pre-requisite: None

Module Description:
SOCIOLOGY OF HEALTH AND DISEASE: This module is offered in the 1st semester of the first academic year. It focuses on the indirect pathway between sociology and health/disease, and emphasizes the role that *beliefs* and *behaviors* play in health and illness. The introductory lectures in this module reflect this emphasis and illustrate how different sets of beliefs relate to behaviors and how both these factors are associated with illness. Students will learn about changes in the causes of death over the twentieth century and why this shift suggests an increasing role for beliefs and behaviors. Students will also master theories of health beliefs and the models that have been developed to describe beliefs and predict health behavior. Beliefs that individuals have about illness will be examined, followed by health beliefs in the context of health professionals–patient communication, as well as health care worker counselling. Students will then examine health-related behaviors and apply many of the theories and constructs to specific behaviors, e.g., addictive behaviors and the factors that predict smoking and alcohol consumption; eating behavior drawing upon developmental models, cognitive theories and the role of weight concern; exercise behavior both in terms of its initiation and methods to encourage individuals to continue exercising; screening of health behaviors and assessment of the factors that relate to whether or not someone attends for a health

check, as well as the psychological consequences of screening programs. Since this module also focuses on the direct pathway between sociology and health/disease, this will be the focus of the second half of the module. Students will master the following topics: stress (definition and measurement); the links between stress and illness via changes in both physiology and behavior and the role of moderating variables; pain and the factors in exacerbating pain perception; how psychological interventions can be used to reduce pain and encourage pain acceptance; the interrelationships between beliefs, behavior and health using the example of placebo effects; illustration of this interrelationship in the context of illness, focusing on HIV, cancer, obesity and coronary heart disease; aspects of women's health; the problems with measuring health status and the issues surrounding the measurement of quality of life; ethics involved in physician/patient interaction and counselling.

BEHAVIORAL SCIENCE II **MBSC3512**

NQF: 5
Contact Hours: 3 lecture hours + 2 hours of practice
Credits: 16
Assessment: 60% Continuous assessment 40% Examination (1 x 3 hours written paper)
Pre-requisite: None

Module Description:
DEVELOPMENTAL PSYCHOLOGY: This module is offered in the 2nd semester of the first academic year. It focuses on applicable developmental theories (psychosocial developmental theory (Erickson), cognitive developmental theory (Piaget), moral development theory (Kohlberg), normal developmental milestones and developmental disorders first evident in infancy, childhood and adolescence. Students will develop understanding of stereotyped movement disorders; learning, speech and communication disorders; social attainment and relations disorders; other pervasive developmental disorders first evident in infancy, childhood and adolescence. Topics: locomotion, cognition, speech and communication, cognitive, emotional and social development, social attachment, primary bonding and belonging, development of relations; mental retardation, motor-skills disorders, pervasive development disorder, attention deficit and disruptive behavior; feeding and eating disorders of infancy or early childhood; tics, elimination disorders, separation disorders, phobia and a selection of disorders commonly associated with infancy, childhood and adolescence.

BEHAVIORAL SCIENCE III **MBSC3631**

NQF: 6
Contact Hours: 3 lecture hours + 2 hours of practice
Credits: 16
Assessment: 60% Continuous assessment 40% Examination (1 x 3 hours written paper)
Pre-requisite: None

Module Description:
CLINICAL PSYCHOLOGY: This module if offered in the 1st semester of the 2nd academic year and it defines and demarcates the study fields of Clinical Psychology and Psychiatry, with the main focus on Clinical Psychology, while Psychiatry follows in the 3rd and 4th academic years. The concept 'mental disorder' is defined and limitations of the categorical approach are discussed. Students are introduced to concepts of clinical judgment, as well as ethnic and cultural considerations applicable to Clinical Psychology. Students will be able to distinguish between 'mental disorder', 'general medical condition', conditions that may be a focus of clinical attention, e.g., psychological factors affecting medical condition, relational problems (parent/child; partner; sibling), problems related to abuse or neglect, noncompliance with treatment and malingering, bereavement, religious or spiritual problem, acculturation problem and phase of life problem, and psychosocial and environmental problems, e.g., problems with primary support group, social environment, occupational, housing, and economic problems, problems with access to health care services, and interaction with the legal system/crime; clusters of mental disorders are discussed at hand of diagnostic criteria, associated features, associated laboratory findings, associated physical examination findings and general medical conditions, specific culture and age features, prevalence, course and decision trees. Students will also be introduced to elementary concepts innate to neuroscience, e.g., neurotransmitters, the limbic system and other functional regions of the brain implicated in clusters of mental disorders. The aim is for students to recognize atypical behavior and mental states, and not to diagnose and treat.

BIOCHEMISTRY

This course is administered over three consecutive semesters, designed to acquaint students with the basic structures and functions of cells and the human organism as a whole in both health and disease situations in terms of the properties of individual molecules by applying one of the most unifying and important concepts: the principle of complementarity of

structure and function. This course commences with the foundation module on organic chemistry and thereafter subsequent modules focus on how the cell synthesizes, catabolizes, and stores macromolecules, generates energy and regulates its metabolic and information pathways in addition to reviewing the basic principles of genetics and frequent genetic diseases encountered in medical practice.

BIOCHEMISTRY I **MBSB3511**

NQF	5
Contact Hours:	3 lecture hours + 2 hours of practical per week
Credits:	16
Assessment:	60% Continuous assessment 40% Examination (1 x 3 hours written paper + 1½ practical examination)
Pre-requisite:	None

Module Description:
ORGANIC CHEMISTRY: This module administered over one semester, is designed to acquaint students to the basic knowledge in classification of organic compounds. This includes the analysis of the chemical and physical properties and the use of organic compounds in medicine. Topics: the chemistry of alkyl halides, alcohols, ethers, carbonyl compounds and amines; aromatic and aliphatic chemistry, heterocyclic compounds; isomerism, stereoisomerism and reaction mechanisms. Upon completion of this course students will be acquainted with the molecular interactions that drive biosynthesis and bioenergetics within cells. . This unit includes an initial block dedicated to review of basic chemistry (the state of matter, atoms, molecules, irons, atomic mass, molar and molecular mass, chemical reactions. Acid -base reactions, quantum numbers, periodic table, ionic bonding, rate of reaction, catalysts, enthalpy, equilibrium constant and solubility).

BIOCHEMISTRY II **MBSB3512**

NQF	5
Contact Hours:	3 lecture hours + 2 hours of practical per week
Credits:	16
Assessment:	60% Continuous assessment 40% Examination (1 x 3 hours written paper + 1½ practical examination)
Pre-requisite:	None

Module Description:
MOLECULAR BIOLOGY AND GENETICS: This module is the first of two, describing the biomolecules and biochemical processes that are required in all functioning cells. Building upon what they have learnt in organic chemistry, students will be acquainted with the chemistry of essential biomolecules and will also be able to explain the molecular basis underlying enzymatic reactions. The course gives an overview of cell structure and function and focuses on the metabolism and storage of macromolecules, energy transduction and the flow of information within cells and between individual cells. In this course, students will become acquainted with the central dogma of molecular biology and the interrelated roles that DNA, RNA and protein play. Students will study gene structure and expression, biochemistry of DNA and RNA, protein biosynthesis, genetic defects and inheritance and genetic recombination. Multifactorial genetic diseases will also be covered. Finally, genetic diseases will figure prominently in discussions of DNA testing, cloning, ethics and genetic counselling. At the end of this course, students will be able to describe the structural and functional relationships of the various components of a cell.

BIOCHEMISTRY III **MBSB3531**

NQF	5
Contact Hours:	3 lecture hours + 2 hours of practical per week
Credits:	16
Assessment:	60% Continuous assessment 40% Examination (1 x 3 hours written paper + 1½ practical examination)
Pre-requisite:	None

Module Description
METABOLISM AND NUTRITION: The course gives an overview of cell structure and function and focuses on the metabolism and storage of macromolecules, energy transduction and the flow of information within cells and between individual cells. The course will give an integrated overview of the functions of protein, carbohydrate and major vitamins and minerals as determinants of health and disease in human populations. The structure and function of vitamins and chemical carcinogenesis will be studied in this course. Students will also be acquainted with the structure and role of the various immunoglobulins in the body's response to foreign materials. Students will be able to explain laboratory findings and

disorders of metabolism and provide an overview of the major macro and micronutrients relevant to human health, the role of key nutrients in the prevention of disease and major nutrition related diseases.

COMMUNITY BASED EDUCATION (COBES)

The education and training of students at the School of Medicine sits on a tripod: students; patient and the community. Much as the patient is the clinical 'laboratory' so is the community the laboratory for learning and practice of social skills, health systems management, primary care, health promotion, disease prevention, rehabilitation and restoration. The community laboratory is the bedrock for translational research. Graduates of the School of Medicine are well grounded on community action skills though continual exposure to real situations obtaining in the households, population groups and the various communities in Namibia.

During the community attachment, students gain understanding of the important concepts and principles of social justice, equity, social action for health on the one hand and strategies for realizing national as well as international goals for high standards of health for all the people. In particular the course acquaints students with national policies, the organizational and management of health services, leadership and governance issues, and community participation, strategies for assuring access to quality healthcare services that are acceptable, affordable and cost-effective. Students are also exposed to the principles and the practice of family medicine as an emerging field of specialization. Topics include, health policy development; community participation; community organization; Rights Based Approaches; planning; action research; evidence based advocacy; communicable and non-communicable disease; screening; immunization; nutrition; maternal and child health; control of epidemics and emergencies; treatment of common diseases; essential drugs; rational use of drugs; district health services; health service management; health economics; environmental and occupational health.

Community attachment follows a logical sequence beginning from the household, urban Primary Care facilities before proceeding to the rural Primary Care attachment (living and working in rural facility and community) and finally attachment to the District Hospital / District Medical Office.

COMMUNITY BASED EDUCATION (COBES) I — MBCC3720

NQF: 7
Contact Hours: 35 hours per week
Credits: 32
Assessment: 100% Continuous Assessment
Pre-requisite: None

Module Description:
COMMUNITY BASED EDUCATION URBAN HEALTH CENTRE/ HOUSEHOLD: The student is exposed to a family at household level in urban settings to understand the socio-economic and cultural determinants of health at household setting i.e. the basic unit of society. In particular, the student gains insight into health seeking behavior, access and demand factors as well as culturally mandated disposal of household income and allocation to health. A student visits a family weekly over a period of 24 months to discuss and observe health seeking behavior, health outcomes for pregnancy, childhood and in chronic disease as well among the elderly or aged persons. Observation on care should include among others persons with disabilities and mental illness or other vulnerable groups. During this longitudinal rotation a group students is attached to an urban health centre or high volume where each student participates in primary care activities such as health education, health promotion, antenatal care, well bay and well mother clinics as well as making observation such as DOTS. In this way a student will apply holistic approach to healthcare delivery. This is also value-based approach that emphasizes on the role of family members in assessing and analysing their own health problems, allocate resources to health and develop solutions. The module gives opportunities for the students to address the root causes of health conditions to improve the well-being of the family. The experience gained will help the students to identify resources in the household and leverage this for health in support health promotion, prevention, control, treatment and rehabilitation. Application of principles and practice of Community Based Education leads to transforming of individuals, families and communities into well-informed, self –reliant and empowered society.
Contents: Household, families, environment, influencing factors, community strengths, resources available at household levels, socio-economic conditions, cultural practices, educational levels, use information to develop intervention strategies, assist in identification of health problems, identify appropriate tools to sustain programmes developed, application of principles and practice of community based education approach, health promotion theories, integrated health education application.

COMMUNITY BASED EDUCATION (COBES) II — MBCC3753

NQF: 7
Contact Hours: 35 hours per week
Credits: 16
Assessment: 100% Continuous Assessment
Pre-requisite: None

Module Description:
RURAL HEALTH CENTER/ COMMUNITY ATTACHMENT: In this module students gain insight into economic and socio-cultural determinants of health in a community and the structural factors that affect access to quality healthcare services. During a period of four weeks students acquaint themselves with principles of community engagement, community entry strategies before they travel to the rural health facility where they will live for three weeks investigating the health status of the community, community organizational institutions and their capacities; role of the community in managing their own health and facilitate a process of needs assessment. Rural Health Centres are expected to provide comprehensive, culturally competent, quality primary health care services to medically underserved communities and vulnerable populations. Health centers are community-based and patient-directed organizations that serve populations with limited access to health care. These include low income populations, the uninsured, those with limited English proficiency, migrant and seasonal farmworkers, individuals and families experiencing homelessness, and those living in public housing. Health center provides all required primary, preventive, enabling health services and additional health services as appropriate and necessary, either directly or through established written arrangements and referrals. Rural Health Centres are the cornerstone of rural healthcare.

The first of four cycles in the community leads to community diagnosis, while the subsequent attachment of new groups of students will work with the community to design and intervention, plan its implementation and lastly conduct an evaluation. This attachment is co-supervised with the Ministry of Health and Social Services health works in the health centre. Similar to the COBES I attachment, students will be engaged in Primary Care Services at the rural health centre where they live and operate from. Topics: health promotion; education; and knowledge of the disease profile in the community. Communicable and non-communicable disease management, childhood illnesses, maternal and infant mortality assessment, existing prevention and control programmes, communication, and behavioural impact activities; School and Place Health Programs; mental healthcare and rehabilitation; sources of data, evaluation methods implemented; categories of indicators used, such as infant mortality rate, maternal mortality rate, child mortality rate, sanitation morbidity (incidence/ prevalence rate); leadership in the community, development of health services, infrastructure, budget allocation for sustainability, human resources, referral system and catchment area; healthcare management

COMMUNITY BASED EDUCATION (COBES) III **MBCC3773**

NQF: 7
Contact Hours: 35 hours per week
Credits: 16
Assessment: 100% Continuous Assessment
Pre-requisite: None

Module Description:
DISTRICT HEALTH SERVICES: District Hospital Rotation: During the District Hospital Rotation students grasp the essence of the heal system and in particular the healthcare benefits the District Hospital confers on the citizenry.

The District Health System: In developing countries, a well-functioning district health system includes community health centers offering primary care services and outreach, and district hospitals that receive referrals from health centers. This organizational structure is fundamental to effective health care, and failure to recognize the interrelationship between local- and district-level facilities has resulted in high health costs and inefficiency. District hospitals form the apex of the pyramid of primary care. They play a critical role in providing individuals and families with timely medical care, including surgery for the conditions that typically account for a large share of a population's disease burden.
District hospitals are community supported governmental entities charged with delivering health care to their communities. They fulfil a vital role in Namibia's health care system because without them, many people would be unable to receive health care in their own communities District hospitals are authorized not only to operate a hospital care, but to deliver any service to help people stay healthy-physically, socially and mentally. Because they are owned and governed by local citizens, district hospitals tailor their services to meet the unique needs of their individual communities. It is this community-based mission that defines and distinguishes district hospitals from other health care entities. The powers of a district hospital are those things which a public district hospital may do, as expressly or implicitly granted by state law. Duties, on the other hand, are those things which a district hospital must do, as required by state law. Of course, there are also things which a public district hospital may not do, which then falls outside the range of both powers and duties. This distinction may prove

useful in thinking about a specific activity of a public district hospital. In exchange for meeting these procedural barriers and requirements, which may be viewed as the tools for assuring that a community truly derives from a public district hospital, the benefits associated with being such an entity, such as to access healthcare, access to tax revenues, low cost bonds, exclusions from payment of certain taxes, and the like.
During the rotation, students shadow District Medical Officer, various hospital managers and departmental heads as an understudy and gain management skills. Students will also gain understanding on the roles and functions of the District Hospital being the apex of the District Health System.

COMMUNITY MEDICINE

In a developing country like Namibia where there is a lot of demand on available services the need for relevance in decision making, in the provision of health services, and in particular and in the education and training of professionals such as doctors become paramount. In order for the training of future doctors to be relevant to national issues and to address the societal needs, it is imperative that education and training should be based on issues that are pertinent to the generality of the population. Such issues are found in the community. Therefore the School of Medicine has positioned itself to respond to societal needs and to be relevant for the socio-economic and the human capital development of Namibia by basing its training programmes in the community as well as the in the hospitals and related settings. The doctors from this programme would be competent in the provision of comprehensive, integrated, family orientated and community based quality health care using bio-psychosocial modules of health care. This is within the framework of community and family medicine. Community medicine is the practice that is derived from and driven by issues in the community/society. It is therefore dependent on evidence derived or obtained from the community and used to find solutions to health challenges in the community amongst individuals and families in the community. These solutions take the form of curative, preventive, promotive and rehabilitative care. The strategy for making healthcare services available and accessible to all in the community is Primary Health Care. Consequently, the education and training of doctors in the School of Medicine will concentrate heavily on Primary Health Care approaches for the provision of equitable in the spirit of social justice. The graduates of the School of Medicine will be trained and educated to be able to provide primary care, secondary and tertiary care where required.

Students will be acquainted with biostatistics, epidemiology and research methods which form the foundations of community medicine. Within the context of Namibia this will also include nutrition. Students will also be introduced to the practice of family medicine through modules in health promotion, environmental and occupational health, communicable and non-communicable diseases (including emergency preparedness and management) and health services management. As a result of education and training in community and family medicine, graduates of the School of Medicine will be competent caregivers (primary care), decision makers, communicators, managers and community leaders. The graduates will appreciate the importance of community diagnosis and the design of strategies for health promotion, treatment, restoration, rehabilitation in conditions affecting individuals, families and the community. The course is offered in 4 modules of family medicine and 4 modules of community medicine.

COMMUNITY MEDICINE I — MCMC3612

NQF: 6
Contact Hours: 3 lecture hours + 1 hour of practice
Credits: 16
Assessment: 60% Continuous assessment 40% Examination (1 X 3 hours written paper)
Pre-requisite None

Module Description
BIOSTATISTICS: Biostatistics is a core science for all medical staff. Skills in statistical analysis are critical for research, evaluation and audit, as well as critical appraisal of the medical literature. The Biostatistics module presents a broad approach to evidence based decision making, statistical analysis, and concentrates particularly on areas which are likely to impact on Medical care or research.

COMMUNITY MEDICINE II — MCMC3631

NQF: 6
Contact Hours: 3 lecture hours + 1 hour of practice
Credits: 16
Assessment: 60% Continuous assessment 40% Examination (1 X 3 hours written paper)
Pre-requisite None

Module Description

EPIDEMIOLOGY: Clinical epidemiology is the science of making predictions about individual patients by counting clinical events in similar patients, using strong scientific methods for studies of groups of patients to ensure that the predictions are accurate. The purpose of clinical epidemiology is to develop and apply methods of clinical observation that will lead to valid conclusions by avoiding being misled by systemic error and chance. It is one important approach to obtaining the kind of information clinicians need to make good decisions in the care of patients. More recently clinicians and epidemiologists have become increasingly aware that their fields interrelate and that each is limited without the other. For clinicians who intend to make up their own minds about the soundness of clinical information, understanding of clinical epidemiology is as necessary as an understanding of anatomy, pathology, biochemistry and pharmacology. Indeed, clinical epidemiology is one of the basic sciences, a foundation on which modern medicine is practiced. Topics: Definition, functions, and characteristics of epidemiology, Definition, functions, and characteristics of epidemiology; Definition, functions, and characteristics of epidemiology; Measuring Disease and Exposure; Measuring Disease and Exposure; Standardization of rates and ratio; Relating risk factors to health outcome; Analytic study designs; Causal inference; Sources of error; Multicausality — Confounding; Practical aspects of epidemiologic research; Data analysis and interpretations

COMMUNITY MEDICINE III **MCMC3632**

NQF: 6
Contact Hours: 3 lecture hours + 1 hour of practice
Credits: 16
Assessment: 60% Continuous assessment 40% Examination (1 X 3 hours written paper)
Pre-requisite None

Module Description

RESEARCH METHODS: The student is expected to be able to challenge the prevailing notion of a hierarchy of research methods (from stronger experimental designs to weaker qualitative techniques) and crude dichotomous thinking (hard versus soft, quantitative versus qualitative; understand that there is no right or wrong methodological approach - rather the central concern should be the appropriateness of the method to the problem being investigated, the knowledge base, the resources available (including both financial and person power), the socio-cultural context, and the level of analysis; recognize that most medical care and public health interventions still occur "downstream" and are unable to significantly affect the course of mortality, morbidity and disability in modern society and that "upstream" primary and secondary prevention is required, especially policy-level interventions designed to affect whole populations; understand that behavioral and social science research methods are particularly well suited to measuring, explaining and evaluating "upstream" public health activities; view quantitative and qualitative research methods as complementary partners in the public health research enterprise, rather than competing with each other.

COMMUNITY MEDICINE IV **MCMC3651**

NQF: 6
Contact Hours: 3 lecture hours + 1 hour of practice
Credits: 16
Assessment: 60% Continuous assessment 40% Examination (1 X 3 hours written paper)
Pre-requisite None

Module Description

NUTRITION: This module will provide an overview of the importance of nutrition in health and will enable students to gain a general foundation on the different types of malnutrition both under and over nutrition including micronutrient deficiencies. Topics: Low birth weight and neonatal mortality; Infant mortality; Child growth and development; Link between nutrition and tuberculosis, respiratory tract infections, malaria, HIV, Measles, and diarrheal diseases; Maternal mortality in developing countries; Malnutrition; Vitamin A, B, C, D deficiencies, Iron deficiency and anaemia; Multiple micronutrient malnutrition including zinc deficiencies; Emergency of obesity in developing countries; Nutritional assessment systems

ELECTIVES

Electives are flexible in context and allow the student to explore future career options. The purpose of an elective is to give students an opportunity to work and gain experience in any clinical, pre-clinical or para-clinical subject of special interest to them. An elective may be in any subject of the medical curriculum or in a subject closely related to medicine. During the elective period of the programme the student will have the opportunity to acquire clinical and professional experiences either in Namibia or elsewhere.

ELECTIVES **MPCE3759 & MPCE3779**

NQF: 7
Contact Hours: 35 hours per week
Credits: 32
Assessment: 100% Continuous Assessment
Pre-requisite: None

Module Description
Three elective blocks of 8 weeks each have been established within the School of Medicine program in the second, third and fourth years (24 weeks total). This time is allocated within the MBChB program to allow students to investigate elements of medicine that are outside the core curriculum, that complement an area of interest or to study subjects in greater detail. In all, it is expected that students will complete 16 weeks of training in the allotted elective time. The established eight-week blocks may be broken into blocks of four weeks (not smaller) but electives cannot run concurrently. Upon completing an elective the student is responsible for ensuring that his or her evaluation form is completed and submitted to the School of Medicine for credit. *The School of Medicine recognizes the importance rural practice and as such requires that at least two four week blocks must be undertaken as rural attachments domestically.* In all cases students must seek approval of a specific elective and the School reserves the right to approve and or cancel chosen electives. We will also actively discourage students from scheduling electives during periods the School has designated for vacation.

FAMILY MEDICINE (PHC)

The course on family medicine is given in four modules over a period of four years. Family medicine is a field of medicine that treats most of the medical needs across the live-span of human being from birth to death. Family medicine is a one-stop –shop for all medical needs and the doctor can refer the patient to doctors with more specialized expert if need arises. The family medicine doctor's job is to help a person stay health with regular basic check-ups and screening tests for various medical conditions such as high blood pressure, diabetes, cancer etc. He is also able to make diagnosis and appropriate treatment. He has a broad knowledge of medicine and can coordinate the care of his patients to optimize the medicine regimens and the care that may be needed from specialist. A student with family medicine knowledge is privileged because he/she can get a chance to know her/his patients on a more intimate level than doctors without this background knowledge. He/she treats both the patient emotion as well as physical needs. The course on family medicine is given in four modules over a period of four years. The course focuses on the difference between family medicine and other clinical disciplines. A student gains skills and experience in doctor-patient communication and is aware of the most important screening methods in prevention of social and health problems. This is realized through didactic teaching and actual practice. This course is organised into 3 hours didactic lectures, tutorials and 4 hours of family and urban health centre attachment (COBES I).

FAMILY MEDICINE (PHC) I **MBSF3532**

NQF: 5
Contact Hours: 3 lecture hours + 2 hour of practice
Credits: 16
Assessment: 60% Continuous assessment 40% Examination (1 X 3 hours written paper)
Pre-requisite None

Module Description
HEALTH PROMOTION: Health Promotion is the provision of information and/or education to individuals, families, and communities that-encourage family unity, community commitment, and traditional spirituality that make positive contributions to their health status. Health Promotion is also the promotion of healthy ideas and concepts to motivate individuals to adopt healthy behaviors.

According to the World Health Organization, Health promotion is the process of enabling people to increase control over, and to improve their health.

Health promotion represents a comprehensive social and political process, it not only embraces actions directed at strengthening the skills and capabilities of individuals, but also action directed towards changing social, environmental and economic conditions so as to alleviate their impact on public and individual health. Health promotion is the process of enabling people to increase control over the determinants of health and thereby improve their health. Participation is essential to sustain health promotion action.

The Ottawa Charter identifies three basic strategies for health promotion. These are advocacy for health to create the essential conditions for health indicated above; enabling all people to achieve their full health potential; and mediating between the different interests in society in the pursuit of health. Every contact between a doctor and a patient can be seen as an opportunity for health promotion and disease prevention. It is therefore essential that the new graduate knows how to make the most of these opportunities through demonstrable knowledge of the principles involved both for individual patients and populations.

FAMILY MEDICINE (PHC) II **MBSF3551**

NQF: 5
Contact Hours: 3 lecture hours + 2 hour of practice
Credits: 16
Assessment: 60% Continuous assessment 40% Examination, (1 X 3 hours written paper)
Pre-requisite None

Module Description
COMMUNICABLE AND NON COMMUNICABLE DISEASE: The module will explore the evidence and the frameworks used to address the burden of non-communicable diseases through action on the conventional risk factors (lifestyle factors such as tobacco use, unhealthy diet, physical inactivity, and high blood pressure etc.) but also more 'upstream factors' and the social determinants of health (e.g. urbanization, income, education, trade, health transitions). This course aims also at providing students with an in-depth theoretical and practical insight into how national NCD programmes can be developed, integrated and maintained in a local, national and global perspective. The Module will allows students to strengthen their skills in analyzing the determinants and burden of NCD, in working across sectors and in promoting interventions to reduce the burden of NCD and health inequities.

FAMILY MEDICINE (PHC) III **MBSF3652**

NQF: 5
Contact Hours: 3 lecture hours + 2 hour of practice
Credits: 16
Assessment: 60% Continuous assessment 40% Examination, (1 X 3 hours written paper)
Pre-requisite None

Module Description
ENVIRONMENTAL AND OCCUPATIONAL HEALTH: This course, offered by the Department of Community, gives medical students the attitudes, skills and knowledge necessary to provide preventive health services to reduce the health impact of disease and injury resulting from workplace and community factors. The course caters for the special needs of medical practitioners, nurses, allied health personnel, scientists and occupational health and safety managers.

FAMILY MEDICINE (PHC) IV **MBSF3771**

NQF: 5
Contact Hours: 3 lecture hours + 2 hour of practice
Credits: 16
Assessment: 60% Continuous assessment 40% Examination, (1 X 3 hours written paper)
Pre-requisite None
Module Description
HEALTH SYSTEMS MANAGEMENT: This module will cover the health information and health care management systems which will include includes (a) a clear measurement strategy including data collection , synthesis of data from different sources and estimation, (b) developing indicators and management systems (c) integration of monitoring of health systems and their performance into health information systems(d) concepts of healthcare financing and health economics (costs, budgeting and financing systems including health insurance); application of economics to decision making process (notions of efficiency, equity); public private mix. The emphasis will be on the ability to detect changes and to show improvement in health care system. The student will understand the basic health system monitoring focusing on the inputs, processes and outputs of the health system. These inputs and processes include human resources, finances, governance and leadership, information, infrastructure, procurement, logistics and supplies, which influence the outputs: service delivery, including availability and quality of services. These outputs affect the utilization of the services by those who need it (coverage) which, if the interventions are effective, should lead to improvements in health outcomes.

INDEPENDENT RESEARCH STUDIES

This module is offered during each of the semesters from the first semester of second year medicine until the tenth and final semester of the degree program. Every medical student has to write a thesis on any given topic of national interest as partial fulfillment towards earning the medical degree is expected to produce doctors with a sound scientific training necessary for the life-long practice of continuing learning and evidence based clinical practice. Research activities are carried over the five years of schooling and these include literature review, fieldwork, practicum, and when appropriate laboratory investigations. In each semester a student is expected to present his/her findings in a class seminar and submit them in writing for evaluation purposes. The module intensifies students on the use of computer programs for storing and analyzing data, and accessing information via the network and discusses basic statistics, probability theory and distribution, principles of sampling, data presentation, measurements of central tendency and dispersion, health statistics, demography, principles and methods of research methodology. Each semester a student is expected to present his/her findings in a public seminar and submit them in writing for evaluation purposes. A student will be assigned a mentor(s) primarily from the Faculty of Health Sciences, or the Ministry of Health and Social Services or other Namibian institutions, and, when appropriate, from outside the country. Topics: Literature review, reference citations, journal article critique, journal article presentation, research proposal development, tool of data collection, questionnaire development, quantitative or qualitative research, sampling techniques and sample size determination, descriptive and analytical statistics, application of spread sheets and other statistical packages for data analysis and presentation (e.g. Excel, EPI Info, STATA, SPSS), manuscript development and publication; application of skills and methods of knowledge management (including telemedicine, and virtual library); practical and evidence-based application of skills in research methodology, descriptive and analytical statistics, demography and health statistics, association, causality and statistical inference.

INDEPENDENT RESEARCH STUDIES I **MCMR3732**

NQF: 7
Contact Hours: 4 hours of practice per week
Credits: 16
Assessment: 100% continuous assessment
Pre-requisite: None

Module Description
INTRODUCTION TO KNOWLEDGE MANAGEMENT: This course introduces students to principles and methods of knowledge management, use of internet and intranet as well web based literature. Students will be able to search for current evidence from the literature, determine the study methods used and test the validity of the conclusions. Through analysis of available literature, each student will select a topic of interest in the context of Namibia, carry out in-depth literature (published and non-published) and write the chapters on introduction, Literature Review and Problem Statement of the proposal. At the end of the semester a student is expected to present his/her findings in a public seminar and submit them in writing for evaluation purposes. Each student will be assigned a member of the Faculty to be a mentor.

INDEPENDENT RESEARCH STUDIES II **MCMR3730**

NQF: 7
Contact Hours: 4 hours of practice per week
Credits: 32
Assessment: 100% continuous assessment
Pre-requisite: None

Module Description
PROPOSAL WRITING: The course builds on the first module and during the space of two semesters, a student gains competence in writing a research proposal with guidance from the mentor. This module allows the student to study a selected subject through active participation in research project and/or in-depth literature review of existing data. The research project may be based on secondary or primary data or data generated from the student's involvement in laboratory or clinical exercises. One month before the end of the second semester, the student will hand in the proposal for review and comments before the final evaluation at the end of the semester. The grading of the proposal is done by a team of mentors from the faculty who are present during the student presentation at the Faculty Conference convened for this purpose. Students can improve the proposal following comments or questions that the peer raise during the presentation.

INDEPENDENT RESEARCH STUDIES III **MCMR3750**

NQF: 7

Contact Hours: 4 hours of practice per week
Credits: 32
Assessment: 100% continuous assessment
Pre-requisite: None

Module Description
DATA COLLECTION AND ANALYSIS: The student focuses on data collection during the first semester of the fourth year as a longitudinal module from primary or secondary sources in Windhoek /Khomas region. According to the proposal, the data can be from the clinics, hospital, City Council, Ministry of Health and Social Services or its institutions or from the community in a specified income cluster. The student will apply the skills of research methodology and epidemiology to clean and process the data using a suitable software package. At the end of the semester, the student will make a presentation detailing the results of the field work, summary tables and preliminary findings. Feedback from the student conference assists the student to review the analytical framework and finalize the data analysis. The conference presentation rating will constitute the continuous assessment for the semester. The student can then proceed to write the thesis using the UNAM format. Optionally, students can write a scientific paper to be submitted in refereed journal.

INDEPENDENT RESEARCH STUDIES IV **MCMR3870**

NQF: 8
Contact Hours: 4 hours of practice per week
Credits: 32
Assessment: 100% continuous assessment
Pre-requisite: None

Module Description
WRITING AND PRESENTATION OF THESIS: This final module is for the student to write the Thesis with regular advice from the Faculty mentor. The student will be able to make revisions using advice from the mentor aiming at producing the final revised copy one month before the end of the tenth semester (end of year 5 academic year). The Thesis will be graded by two faculty appointed evaluators. The student will also make a presentation of the research study at the final student conference to be held before graduation. The mentor will assist a student who requests to prepare a manuscript for publication in a referred scientific journal.

INTERNAL MEDICINE

The course on internal medicine is given in four modules beginning in year two of the course with the final module being offered in year five. During this period the student progressively grasps a body of scientific knowledge on the individual disease causality, epidemiology, natural history of frequent or rare but life threatening medical conditions, the clinical presentation of each disease, its diagnosis and treatment, prognosis and rehabilitation. The student, through shadowing a physician, gains competence in professionalism, clinical reasoning and executing the necessary clinical skills expected of a newly graduated doctor. The modules emphasize on evidence based medical practice, integration of prior knowledge of basic sciences, microbiology, pathology, and pharmacology and laboratory medicine.

INTERNAL MEDICINE I **MCMM3732**

NQF: 7
Contact Hours: 3 lecture hours + 4 hours of practice per week
Credits: 16
Assessment: 60% Continuous assessment 40% Examination (1 X 3 hours written paper + 2 hours clinical + 30 minutes viva voce examination)
Pre-requisite: MBSC1533

Module Description
INTRODUCTION TO CLINICAL METHODS AND NURSING SKILLS: This module which is the mainstay and foundation of clinical medical practice is designed to introduce the students early on to the professional and technical skills, scientific knowledge, and human understanding necessary in the care of the sick, their families, and the community and build up on the art of medical practice to near perfection. The module also introduces students to basic nursing procedure through didactic teaching and hands-on practice. A student is also equipped with knowledge and skills for providing emergency First Aid resuscitation and support before arranging for secure and safe transfer to health facility. It emphasizes on the establishment of direct, one-to-one physician-patient relationships, the process of social communication, and the performance of physical

examination based on competent use of professional skills. Topics covered include communication skills, medical ethics, general, regional, and systemic physical examination of patients; basic nursing skills; First Aid.

INTERNAL MEDICINE II **MCMM3751**

NQF: 7
Contact Hours: 3 lecture hours + 4 hours of practice per week
Credits: 16
Assessment: 60% Continuous assessment 40% Examination (1 X 3 hours written paper + 2 hours clinical + 30 minutes viva voce examination)
Pre-requisite: MBSC1533

Module description

JUNIOR CLERKSHIP IN GENERAL MEDICINE: This module is organized in clinical clerkships and clinical practice carried out in the ambulatory care settings and in medical wards of teaching hospitals. It emphasizes on the establishment of direct, one-to-one physician-patient relationships, the process of social communication, and the performance of physical examination based on competent use of professional skills and introduces students to different diseases that affect the human resulting from different aetiological causes. This course acquaints students with the aetiology, pathogenesis, natural history, treatment and prognosis of disorders of respiratory system, the cardiovascular system, endocrine disorders, neurological disorder; disorders of the lymphoreticulartisses and locomotor system; haematological conditions, cancer and other growths; ageing and development; organic dysfunction, or injury. This course also acquaints students with clinical signs and symptoms of various diseases and the patho-physiological explanation of those signs and symptoms. Students will develop professional skills and experience in conducting a medical interview, examining adult patients, preparing patient record and presenting the findings to clinical faculty. Students will also learn how to make clinical follow-up of patients and their discharge, use laboratory and diagnostic tools, interpret results and use evidence to make clinical decisions. This course integrates laboratory medicine and evidence based clinical decision-making. At the end of the course students will be able to evaluate the indications for laboratory requests, choice of diagnostic tests, and procedures, interpret laboratory findings and explain patient signs, symptoms, and disease progression on the basis of laboratory test results and pathophysiology. Topics: The course covers topics in general medicine (homeostasis, fluid and electrolyte balance; diseases of blood, blood vessels, lymphoid tissues and the heart; hear failure; lung disease and respiratory failure; renal conditions and renal failure; diseases of metabolism; endocrine dysfunction in states of hypo and hyper-function; liver disorders and failure, gastrointestinal malignancy and disorders of the pancreas and digestive system; stroke and tumors /space occupying lesions of the brain and meninges; hemi and paraplegia; allergy and autoimmune disease). Topics in laboratory management: basic chemistry of body fluids, enzymatic, biochemical, and hematological tests on respiratory, circulatory, hemolymphopoietic, and endocrine systems. This course is organized in clinical clerkships and clinical practice is carried out in the ambulatory care settings and in medical wards of teaching hospitals. Students will rotate through general medical wards, cardiology department, neurology department, renal unit /nephrology ward, ambulatory care and specialist clinics and follow up patients to the intensive care unit.

INTERNAL MEDICINE III **MCMM3772**

NQF: 7
Contact Hours: 3 lecture hours + 4 hours of practice per week
Credits: 16
Assessment: 60% Continuous assessment 40% Examination (1 X 3 hours written paper + 2 hours clinical + 30 minutes viva voce examination)
Pre-requisite: MBSC1533

Module Description

JUNIOR CLERKSHIP - INFECTIOUS DISEASES AND DERMATOLOGY: This course introduces students to different diseases that affect the human organism resulting from different infectious agents and parasites as well as medical conditions affecting the skin. Students are expected to develop professional and clinical reasoning skills, analyse and carry on differential diagnosis of bacterial, viral, fungal and human parasitic diseases, evaluate the results and develop treatment plan for individual patients and their families within a health facility or community setting. The clinical practice will be carried out in medical wards or outpatient clinics at teaching hospitals or health centers. The course is organized around clinical clerkships. Topics covered include acute and chronic illnesses resulting from infectious agents affecting the digestive system, acute and chronic infections of the locomotor apparatus, neurological systems, respiratory system, cardiovascular, system skin and urinary system. The course integrates the patho-physiology of infectious diseases, and the epidemiology of frequent communicable disease with particular reference to Namibia and the Southern Africa region. The dermatology module is designed to describe the most common dermatological diseases, distinguishing normal skin from abnormal skin and significant abnormalities from insignificant ones, integrating pertinent signs and symptoms into an appropriate differential diagnosis. Students should recognize common dermatological conditions, explain the underlying mechanism(s), develop

and implement treatment plan or referral of patients, and explain the pharmacology of frequently used drugs for the treatment of dermatological problems. Topics covered include: approach of patient with skin disorder; diagnostic techniques; common skin disorders; infectious dermatosis: superficial mycosis, dermatosis caused by viruses, including HIV manifestations, dermatosis caused by zooparasites, pyoderma, skin manifestations of sexually transmitted diseases, leprosy; immunologically mediated skin diseases, papulosquamous disorders: psoriasis, lichen planus; benign and malignant pigmented lesions; drugs and preparations in common use for the treatment of common skin conditions. The course also integrates clinical laboratory practice which acquaints students with cost-effective and rational use of laboratory tests in clinical reasoning and decision-making processes with respect to infectious diseases and dermatology. Students will also be required to correctly collect specimens and carry out simple laboratory tests. Students will rotate through the infectious diseases hospital or ward, isolation wards /hospital, dermatology and other specialized clinics.

INTERNAL MEDICINE IV **MCMM3870**

NQF: 7
Contact Hours: 3 lecture hours + 4 hours of practice per week
Credits: 32
Assessment: 60% Continuous assessment 40% Examination (1 X 3 hours written paper + 2 hours clinical + 30 minutes viva voce examination)
Pre-requisite: MBSC1533

Module Description
SENIOR CLERKSHIP: This course enables students to acquire clinical skills in Internal Medicine and, under the supervision of a qualified Internist(s), gain practical hands-on-experience and under supervision provide professional care to individual patients, their families, and population groups within the setting of a hospital, a household, or community. At the end of the course, a student will be able to independently carry out a professional interview and physical examination of an adult patient, suspect the presence of a medical condition(s), institute cost-effective investigative plan to confirm the diagnosis, develop safe and effective treatment plan, including therapeutic procedures, after-care management, and assess quality of care. The student should be able to acquire practical skills on the epidemiology, pathogenesis, preclinical and clinical manifestations of communicable and non-communicable diseases, including mental health conditions. The student should be eligible to perform the professional tasks of a newly graduated physician in the management of illnesses resulting from physical agents, chemicals, infectious agents, physiological and anatomical abnormalities, and degenerative processes affecting the nervous, respiratory, cardiovascular, urinary, digestive, and endocrine systems, haematological, locomotor apparatus, and epidemiological health problems. Student rotations will include emergency care unit and all the major departments of internal medicine.

MEDICAL IMAGING

Medical Imaging is taught in two semesters first at the onset of the clinical skills method and during the junior clerkship years. This approach provides sufficient opportunity to a student to integrate the learning of imaging with its application in clinical settings. Thus while the first course provides the foundations of radiology and radiation, correlating it with normal anatomy, the second course aims at consolidating vertical and horizontal integration and is patient centred. Medical imaging courses take the form of didactic, case based learning and bedside clinical education. The student grasps clinical reasoning skills necessary for interpreting radiological studies, understanding the role of imaging in clinical investigation and management guidelines and legislation on radiation and radiation protection.

MEDICAL IMAGING I **MCMI3521**

NQF: 5
Contact Hours: 2 lecture hours and 2 hours of practice per week
Credits: 8
Assessment: 60% Continuous assessment 40% Examination. (1 X 3 hours written paper)
Pre-requisite: None

Module Description
INTRODUCTION TO IMAGING: This acquaints a student to medical physics, radiation and use of radioisotopes in medicine as a diagnostic tool and for treatment. The module discusses risks to radiation, radiation protection, and legislation on radiation, various imaging techniques, the normal appearance of various tissues and organs in plain films, angiography, contrast studies, tomography and resonance. At the end of the module, a student will be able to differentiate normal from

abnormal findings in radiographs and diagnose common pathologies in the chest, abdomen, bone and the skeletal system. The student will also be able to institute due care practices in requesting for imaging investigations, be mindful of the comfort of the patient and obtain consent as necessary. Topics covered include principles of radiation physics and radiological technology; radiation protection; radiobiology; X-rays: normal systemic anatomy using plain X-rays (plain films, contrast studies); imaging modalities and their application; radio-isotope imaging, computerized tomography, magnetic resonance imaging, ultrasound, radiological, angiography, images of osteomyoarticular, respiratory, circulatory, digestive, urogenital, hemolymphopoietic, and endocrine systems; radio-therapeutics and bio-effects of radiation.

MEDICAL IMAGING II **MCMI3762**

NQF: 7
Contact Hours: 2 lecture hours and 2 hours of practice per week
Credits: 8
Assessment: 60% Continuous assessment 40% Examination. (1 X 3 hours written paper)
Pre-requisite: None

Module Description
SYSTEMIC IMAGING This is an applied system-based module on the use of different modalities of imaging to diagnose and manage common disease affecting different systems of the body. The gains experience and proficiency in cost-effective use of medical imaging, the use of plain films as an imaging primary technique for the general physician, actual working with the ultrasound in bedside care of patients, the benefits of tomography, angiography and radio-magnetic resonance. Topics in neuroscience include MRI, CT and plain films: haemorrhage, subarachnoid and subdural haemorrhage, infarct, oedema, mass and hydrocephaly; in the spine: metastatic mass, disc disease, compression; abdomen: bowel obstruction, aortic aneurysm, renal mass pancreatic mass, hepatic mass, abdominal mass; Chest: pneumonia, effusion, atelectasis, nodule, congestive heart failure, pulmonary oedema, pneumothorax; pelvis: prostate nodule, testicular mass; neck: thyroid nodule; indications of ECHO cardiograph, Doppler; bile duct ultra sound; use of ultra sound and radioisotopes in treatment.

MEDICAL MICROBIOLOGY

The Microbiology course is given in three consecutive modules of (i) Bacteriology, virology and Immunology, (b) Parasitology, Mycology and Entomology (c) Systemic Microbiology. The course discusses the nature, metabolism, nutrition, growth, pathogenicity, and prevention of microorganisms and their interactions with the human host, to review bacteria, fungi, viruses and parasites of medical importance and highlight the mechanisms of action of major classes of anti-microbial agents and the drug resistance that develop in the process, and the physical and chemical methods thereof in preventing infectious microorganisms. The modules also focus on reviewing the basic characteristics and functions of the immune system and its responses to intrusion of pathogens and foreign bodies into the body and discusses the nature, metabolism, nutrition, life-cycles, and pathogenicity of parasites of medical importance, their interactions with hosts, their vectors, their diagnoses, prevention, and treatments, particularly those of the protozoa, helminth, cestode, trematode, and nematode classes, which are quite prevalent in the tropics.

MEDICAL MICROBIOLOGY I **MPCM3631**

NQF: 6
Contact Hours 3 lecture hours + 2 hours of laboratory practical per week
Credits: 16
Assessment: 60% Continuous assessment 40% Examination (1 x 3 hours written paper + 1½ practical examination
Pre-requisite: MBSB1533

Module Description
BACTERIOLOGY, VIROLOGY AND IMMUNOLOGY: This course examines the nature, metabolism, nutrition, growth, pathogenicity, and prevention of microorganisms and their interactions with the human host. Students will grasp the structure, metabolism, pathogenicity and pathophysiological changes resulting from bacterial infections as well as the immunological response to infection. The courses emphasizes on bacteria and viruses of medical importance and highlights the mechanisms of action of major classes of anti-microbial agents and the drug resistance that develop in the process, and the physical and chemical methods thereof in preventing infectious microorganisms. The course also focuses on understanding the basic characteristics and functions of the immune system and its responses to intrusion of pathogens and foreign bodies into the body, normal and abnormal immune response and the application of immune factors in the prevention and treatment of disease. Topics covered include: dynamics of the immune response, immunity, immune tolerance, allergy and hypersensitivity, autoimmunity, immunodeficiency, immunosuppression, tissue transplant, immune-surveillance, tumor immunity, principles of blood transfusion, immunotherapy and immunization.

MEDICAL MICROBIOLOGY II **MPCM3632**

NQF: 6
Contact Hours 3 lecture hours + 2 hours of laboratory practical per week
Credits: 16
Assessment: 60% Continuous assessment 40% Examination (1 x 3 hours written paper + 1½ practical examination
Pre-requisite: MBSB1533

Module Description
PARASITOLOGY, MYCOLOGY AND ENTOMOLOGY: This course examines the nature, metabolism, nutrition, growth, reproduction and pathogenicity of parasites and fungi, and the human host response Students will grasp the structure, metabolism, pathogenicity and pathophysiological changes resulting from parasitic and fungal infection. The course emphasizes on the mechanisms of action of major classes of drugs used to treat parasitic and fungal infections. Topics: nature, metabolism, and nutrition of parasites and fungi; life-cycles, and pathogenicity of parasites of medical importance, immune response to parasitic invasion, escape mechanism; diagnosis, prevention, control and treatment, particularly those of the protozoa, helminthic, cestode, trematode, and nematode classes; arthropod-borne infections due to protozoa (malaria, African trypanosomiasis, South American trypanosomiasis, leishmaniases), and helminthes (filariases, loaisis, onchocerciasis); external, deep and visceral mycoses.

MEDICAL MICROBIOLOGY III **MPCM3651**

NQF: 6
Contact Hours 3 lecture hours + 2 hours of laboratory practical per week
Credits: 16
Assessment: 60% Continuous assessment 40% Examination (1 x 3 hours written paper + 1½ practical examination)
Pre-requisite: MBSB1533

Module Description
SYSTEMIC MICROBIOLOGY: The course discusses pathogenicity, pathogenesis and pathophysiology of frequently encountered bacterial, viral, fungal and parasitic infections using an organ-system approach. The epidemiology, transmission, natural history of the common infections; clinical manifestations and their scientific mechanism; diagnosis and treatment of the common bacterial, viral, and fungal infections; laboratory diagnosis and treatment of common parasitic infections. Students will be able to elicit history, symptoms and clinical signs of infections in various organ-systems, perform laboratory tests and grasp the principles of their treatment. Topics: infectious disease; skin infections; infections of the chest, respiratory and cardiovascular systems; infections of the biliary, and gastrointestinal system, infections of the urogenital system, infections of the locomotor system, the nervous system and meninges. Use of imaging and immunological techniques in the diagnosis of common infections will be used during this course.

OBSTETRICS AND GYNAECOLOGY

This course introduces students to the diagnoses and treatments of abnormalities and diseases of the female reproductive system and the normal processes of pregnancy and puerperium and the management of common obstetrical and gynaecological conditions and their complications (including the management of fertility and infertility). The course is offered in three consecutive modules during the third, fourth and final year of study.

OBSTETRICS AND GYNAECOLOGY I **MCMO3852**

NQF: 8
Contact Hours: 3 hours of lecture + 8 hours of practice per week
Credits: 16
Assessment: 60% Continuous assessment 40% Examination (1 X 3 hours written paper + 2 hours clinical + 30 minutes viva voce examination)
Pre-requisite: None

Module Description
PREGNANCY AND LABOUR: This course is designed to introduce students to the management of common obstetrical conditions and their complications. Students will be able to evaluate normal and suspected high risk or abnormal

pregnancy, carryout selected diagnostic investigations, develop an intervention plan, perform practical and surgical interventions independently or as an assistant to clinical faculty member, prepare patient record, present findings to clinical faculty members, and make proper referrals of patients. Topics covered include : Anatomy and physiology of the female reproductive system; conception, pregnancy, the management of normal pregnancy; high-risk pregnancy; abnormal pregnancy; medical conditions and HIV in pregnancy; abnormal stages of labor; ectopic pregnancy; patho-physiology of high risk and abnormal pregnancy; obstetric operations, e.g. caesarean section and curettage; supervision of other caregivers within a health facility or home visits; ethical issues in Obstetrics- all with specific reference to practicing in Namibia; Miscellaneous medical disorders. Haematological problems in pregnancy: Renal disease, Diabetes and endocrine disease, Heart disease, hypertensive disorders; malpresentation; malposition; cephalopelvic disproportion and obstetric procedures; induction and augmentation of labour; prolonged pregnancy; preterm labour; multiple pregnancy; disorders of fetal growth and assessment of fetal well-being; obstetric emergencies; Trophoblast disease; ectopic pregnancy; recurrent miscarriage; spontaneous miscarriage; neonatal care for obstetricians; puerperium and lactation; analgesia and anaesthesia; fetal monitoring during labour; antenatal care; pre-conception counseling; Normal fetal growth; the placenta and fetal membranes; prenatal diagnosis and genetics.

OBSTETRICS AND GYNAECOLOGY II **MCMO3871**

NQF: 8
Contact Hours: 3 hours of lecture + 8 hours of practice per week
Credits: 16
Assessment: 60% Continuous assessment 40% Examination (1 X 3 hours written paper + 2 hours clinical + 30 minutes viva voce examination)
Pre-requisite: None

Module Description
GYNAECOLOGY: Students will be able to use their professional skills to identify diseases affecting the reproductive system, conduct appropriate investigations, interpret results, explain the underlying patho-physiological processes, and develop a management plan. The course will be semi-integrated with Community Medicine and Primary Health Care. Topics covered include anatomy and physiology of the female reproductive system; The menstrual cycle; Normal and abnormal development of the genital tract; gynaecologic exploration; major gynaecologic syndromes: leucorrhoea, pelvic pain and menstrual abnormalities; affections of vulva and vagina; benign and malignant affections of uterus; ovarian tumors; pelvic inflammatory disease; affections of breasts; uterine prolapse; climacterium and menopause; contraception and infertility; sexual education and family planning; female genital mutilation; further complications; Hysteroscopy and laparoscopy; Urinary incontinence; Pelvic floor dysfunction; uterovaginal prolapsed; menopause and the postmenopausal woman.; assisted reproduction; infertility; endometriosis; chronic pelvic pain; menstrual problems: menorrhagia and primary dysmenorrhagia; polycystic ovary syndrome and secondary amenorrhoea; primary amenorrhoea; Gynaecological disorders of childhood and adolescence; the role of ultrasound in gynaecology; termination of pregnancy.

OBSTETRICS AND GYNAECOLOGY III **MCMO3870**

NQF: 8
Contact Hours: 3 hours of lecture + 8 hours of practice per week
Credits: 32
Assessment: 60% Continuous assessment 40% Examination (1 X 3 hours written paper + 2 hours clinical + 30 minutes viva voce examination)
Pre-requisite: None

Module Description
SENIOR CLERKSHIP: This course enables students to practice gynaecological and obstetrical care of patients and, under the supervision of a Gynaecologist-Obstetrician, gain practical hands-on-experience in the care of individual patients with conditions affecting the reproductive organ-systems and their functions in women during the entire reproductive cycle as well as during states of pregnancy and lactation and deliver reproductive health care in a health facility, household, or community. At the end of the course, a student will be able to independently conduct professional interview and physical examination of a patient, suspect the presence of health risk or medical condition(s) affecting sexuality and reproduction, institute emergency care and propose a cost-effective investigative plan to confirm a diagnosis, safe and effective treatment, including reproductive care for adolescents, a pregnant mother and her family, as well as other therapeutic procedures, and after-care management and rehabilitation of a patient. Perform the listed obstetrical procedures and assist in frequently performed surgical operations. Students acquire practical skills in the assessment of sexuality, hereditary conditions, normal pregnancy and high risk pregnancy, home delivery and institutional management of labour; complications during labour, caesarean section and assisted delivery, indications and contra-indications of frequently used procedures and interventions, puerperium, contraception, infertility, the epidemiology, pathogenesis, preclinical and clinical manifestations of communicable and non-communicable diseases that affect the reproductive system and functions

including sexually transmitted diseases, and that are prevalent in Namibia and neighbouring countries, emergencies affecting pregnancy and the reproductive systems, evidence-based care for women and adolescents, invasive and non-invasive diagnostic and therapeutic procedures, cost-effective and rational use of drugs, surgical interventions and laboratory investigations, screening for disease markers, disease prevention and rehabilitation, health care for populations and health groups, ethical issues and the gate-keeping role of physicians, health resource allocation and management, and health systems research in gynaecological-obstetrical care.

PAEDIATRICS

This course introduces students to the evaluation and management of the new-born, identification and management of diseases of infancy and childhood, and management of paediatric emergencies, evaluation and management of common paediatric conditions and emergencies. It prepares students in developing clinical reasoning in paediatrics, making laboratory and diagnostic requests, carrying out simple diagnostic procedures and laboratory tests, developing a management plan, advising children, adolescents and parents on a health problem, its prevention, and management in a health facility or community. This course is founded on the individuality and uniqueness of a child and the notion that a *child is not a small adult* and that an *adolescent is a child who thinks that s/he is an adult*.

The course is given in three modules during each of year three, four and the final year.

PAEDIATRICS I — MCMT3852

NQF: 8
Contact Hours: 3 hours of lecture + 8 hours of practice per week
Credits: 16
Assessment: 60% Continuous assessment 40% Examination (1 X 3 hours written paper + 2 hours clinical + 30 minutes viva voce examination)
Pre-requisite: None

Module Description
THE NEW BORN, INFANCY AND EARLY CHILDHOOD: This course acquaints students with professional skills for the resuscitation of the new born and child care during infancy and early childhood. Students will be able to recognise and manage diseases of infancy and early childhood, and paediatric emergencies. A student will be expected to be able to professionally interview parents or guardian of the new-born, an infant, or a child, carry out physical examination on patients, select diagnostic tests, and evaluate results before proposing an intervention plan. The student will present the patient to clinical supervisor for review and discussion of the differential diagnosis, treatment plan, the description of the pathogenesis, important concepts and prognosis. The clinical supervisor will then assign specific treatment actions for the student to perform with respect of each individual patient. The course will be partially integrated with Community Medicine and Primary Health Care. Topics covered include: Congenital malformation; neonatology, growth and development; nutrition; infectious diseases; HIV/AIDS; diseases of the upper respiratory tract; diseases of the lower respiratory tract; disorders of the immune system; acute and chronic digestive system disorders; disturbances of acid-base balance; cardiovascular diseases; renal diseases; nervous system diseases; hemolymphopoietic and endocrine diseases; integrated management of childhood illnesses (IMCI);. Emphasis will be on priority diseases in Namibia.

PAEDIATRICS II — MCMT3871

NQF: 8
Contact Hours: 3 hours of lecture + 8 hours of practice per week
Credits: 16
Assessment: 60% Continuous assessment 40% Examination (1 X 3 hours written paper + 2 hours clinical + 30 minutes viva voce examination)
Pre-requisite: None

Module Description
CHILD HEALTH AND PAEDIATRICS: This course discusses the evaluation and management of common paediatric conditions and emergencies. It prepares students in developing clinical reasoning in paediatrics, making laboratory and diagnostic requests, carrying out simple diagnostic procedures and laboratory tests, developing a management plan, advising children, adolescents and parents on a health problem, its prevention, and management in a health facility or community. At the end of the course, students will be able to recognize the presence of a health problem or acute emergency in a child through interview or by carrying out medical examination. They will be able to initiate life-saving interventions in emergency situations, stabilize the clinical state of a patient, refer as necessary, request for appropriate laboratory

investigations, interpret findings, explain the patho-physiology of an illness, and manage a patient independently while under supervision. Topics covered include differential diagnosis, management and prevention of emergency, acute or chronic illness in childhood and adolescence, medical documentation, management of terminally ill and bereavement, psycho-social aspects of diseases in children, resuscitation of new-born, counseling, HIV/AIDS, paediatric drug dosages and their side effects, rehabilitation, ethical and medico-legal issues in paediatrics.

PAEDIATRICS III **MCMT3870**

NQF: 8
Contact Hours: 3 hours of lecture + 8 hours of practice per week
Credits: 32
Assessment: 60% Continuous assessment 40% Examination (1 X 3 hours written paper + 2 hours clinical + 30 minutes viva voce examination)
Pre-requisite: None

Module Description
SENIOR CLERKSHIP: This course enables students to practice medical and health care of neonates, children and young adolescents and, under the supervision of a paediatrician, gain hands-on-experience in treating children from the time of conception to early adolescence and provide professional care to individual patients, their families, and population groups within the setting of a hospital, a household, or community. At the end of the course, a student will be able to independently obtain clinical history from a child, parents, or guardian, and perform physical examination on the newborn or child, confirm normal growth and development of a child or suspect the presence of a medical condition(s), institute cost-effective investigative plan to confirm the diagnosis, administer safe and effective emergency treatment; develop a comprehensive treatment plan including therapeutic procedures, counselling, after-care management, and assessment of the quality of care. The student will perform satisfactorily all the listed clinical procedures in the paediatric log for undergraduates. The student acquires practical skills in the assessment of pre-gestational states and conditions that affect normal growth and development of the unborn, the neonate, and during the childhood periods, resuscitation of the newborn, growth monitoring of a child, emergency paediatric care, epidemiology, pathogenesis, preclinical and clinical manifestations of communicable, non-communicable, and tropical diseases of children prevalent in Namibia and neighbouring countries, integrated management of childhood diseases, evidence-based practice in child and adolescent health care, simple invasive and non-invasive diagnostic and therapeutic procedures, cost-effective and rational use of drugs and laboratory investigations, disease prevention and rehabilitation, population and group health, medical ethics and gate-keeping role of a physician, health resource allocation and management, and health systems research.

PATHOLOGY

The focus of these two modules is on the structural changes of tissues and organs of the human body, which result in or from pathological changes, or are caused by excessive functional adaptation or accumulation of the same.

PATHOLOGY I **MPCA3732**

NQF: 7
Contact Hours: 3 lecture hours + 2 hours of practice
Credits: 16
Assessment: 60% Continuous assessment 40% Examination (1 x 3 hours written paper + 1½ practical examination)
Pre-requisite: None

Module Description:
GENERAL PATHOLOGY: This course introduces structural changes affecting tissues, organs and systems of the human body which result from injury from biological, physical or chemical substances and the pathological changes thereof. The course also discusses cellular, molecular and organ-system changes as a result of excessive adaptations and accumulation. Students will identify and explain the related clinical manifestation of pathologies on the basis of the underlying pathological changes and pathogenesis. Topics: cell injury and death, inflammation, circulatory disorders, neoplasia, accumulations and pigmentation. Students identify pathological changes at the macro, tissue, organ and system as well as at the microscopic and molecular level.

PATHOLOGY II **MPCA3751**

NQF: 7
Contact Hours: 3 lecture hours + 2 hours of practice
Credits: 16
Assessment: 60% Continuous assessment 40% Examination (1 x 3 hours written paper + 1½ practical examination)
Pre-requisite: None

Module Description:
PATHOPHYSIOLOGY: This courses s focuses on systemic discussions of the various pathological lesions resulting from cell injury, acute and chronic inflammation, metabolic disorders, neoplasia and accumulation; non-infective disorders with emphasis on myocardial infarction, atheroma and autoimmune disease. Topics: cancer and other disorders of metabolism, circulatory system, chest and respiratory systems; haematological disorders; endocrine and neurological disorders, skin and integuments, locomotor and gastrointestinal system disorders; pancreatic and biliary tract disorders; urinary and other soft tissue disorders; forensic pathology; cytology and tumor makers and their use in diagnosis and disease prevention. Students will grasp the principles of serological studies, hormone assays, viral studies ELISA, Western Blot, organ specific function tests, liver function tests, thyroid function and their application in medicine.
Learning Outcomes:
At the end of this module a student is expected to be able to:

PHARMACOLOGY

This course introduces the student to the scope and content of pharmacology: the knowledge of history, sources, physical and chemical properties; compounding, biochemical and physiological effects, mechanisms of action, absorption, distribution, metabolism and excretion. Students gain experience and skills in effective and safe use of drugs in the diagnosis, prevention, or treatment of disease, and rational use of drugs taking into account frequent inventions and new drugs or modifications thereof. Students are able to give concise elaboration on the standard / current treatment regimens in use (local and international), describe the progress in drug therapy, research, and clinical trials and investigations techniques with the help of other basic and clinical specialties such as molecular biology. Finally, a student is able to recognize reliable sources of drug information.

PHARMACOLOGY I **MCMP3732**

NQF: 6
Contact hours: 3 lecture hours + 2 hours of practice
Credits: 16
Assessment: 60% Continuous assessment 40% Examination (1 X 3 hours written paper)
Pre-requisite: MBSP3631; MBSB3531
Co-requisite: MPCP3732; MPCM3631; MCMM3732

Module Description

INTRODUCTION TO PHARMACOLOGY: This module highlights the fundamental principles of action of all medicinal drugs and is semi-integrated with the module on Internal Medicine. The module focuses on pharmacodynamics, pharmacokinetics, and toxicity of drugs used in diagnosis, treatment, and prevention of disease, with emphasis on drugs frequently encountered in clinical practice. Special focus will be given to medicines influencing the autonomic nervous system (ANS) as knowledge gained is generalizable to pharmacology of other systems. Students will also develop a further understanding of experimental pharmacology and how it can be used as a tool in the development and/or reformulation of new drugs. Upon completing this unit students will be able to correlate drug effects with physiological function and explain a given drugs mode of action as well as side effects and the mechanisms by with these drugs modify the physiological system. Topics: compliance, rational drug use; risk benefit ratio in prescribing; prescribing; use of generics or trade (brand); selection of drugs; route of administration; formulation and dosage; classification of drugs; metabolism and elimination of drugs; side effects;

PHARMACOLOGY II **MCMP3751**

NQF 7
Contact hours: 3 lecture hours + 2 hours of practice
Credits: 16

Assessment: 60% Continuous assessment 40% Examination (1 X 3 hours written paper)
Pre-requisite: MBSP3631and MBSB3531
Co-requisite: MPCP3732, MPCM3631, MCMM3732

Module Description
SYSTEMIC PHARMACOLOGY AND THERAPEUTICS: A continuation of Pharmacology I, this module looks at that pharmacology of drugs used in the treatment of the central nervous system (CNS), immunotherapy and the regulation of inflammation and autoimmunity and in the chemotherapy of infections and cancers. Upon completing this course students will understand the etiology of CNS diseases, commonly prescribed drugs, and the mechanisms by with these drugs modify this physiological system. Drug dependence will also be investigated with students developing an understanding of the mechanisms underlying this phenomenon. Immune dysfunction can have systemic effects. Here students will develop an understanding of both the innate and cellular immune systems and how drugs can be used regulate them individually or in a coordinated fashion. This course introduces the pharmacology of drugs used in the treatment of systemic diseases of the cardiovascular, urinary, digestive and peripheral nervous systems. Finally, students will look at the agents of chemotherapy used in ameliorating infections and cancers.

PHYSIOLOGY

Three modules focus on the basic principles of Physiology and discuss in detail the development and normal functions of the ten physiological systems within the body. The courses undertaken over the first three semesters are designed to lay a solid foundation and review in detail concepts in Physiology essential in understanding the patho-physiology of diseases.

PHYSIOLOGY I — MBSP3511

NQF: 5
Contact Hours: 3 lecture hours + 2hours of tutorial (or 3 hours of practice)
Credits: 16
Assessment: 60% Continuous assessment 40% Examination (1 x 3 hours written paper + 1½ practical examination)
Pre-requisite: None

Module Description
EMBRYOLOGY AND DEVELOPMENTAL BIOLOGY: This first course in physiology introduces students to the fundamental processes and concepts of embryonic development. These include the acquisition of multicellularity, organization of the early embryo, morphogenesis of tissues, major organ systems, fetal membranes, growth, differentiation and analysis of common developmental defects. Upon completion of this course students should be versed in the genetic aspects of early development as well as the interactions that occur in development leading to the formation of the ectoderm, mesoderm and endoderm and the further differentiation of these layers into tissues, organs and systems. Particular attention will be played throughout the course to cell-cell communication and the pivotal role signalling plays in development.

PHYSIOLOGY II — MBSP3512

NQF: 5
Contact Hours: 3 lecture hours + 2hours of tutorial (or 3 hours of practice)
Credits: 16
Assessment: 60% Continuous assessment 40% Examination (1 x 3 hours written paper + 1½ practical examination)
Pre-requisite: None

Module Description
BASIC CELL PROCESS AND HOMEOSTASIS, AND CONTROL: The study of physiology encompasses a number of fields of study; from molecules to ecosystems. Here we begin with an investigation of basic cell processes. The students will be expected to understand how molecular interactions are integral to the generation, storage and utilization of energy, signalling and cellular dynamics. Building upon this we will stress the importance of cellular and tissue compartmentation, and how information flows within a cellular and mass context. The integration of these systems and how they may impact homeostasis is also of critical importance. By the end of the course students will also be familiar with the components and mechanics of the Endocrine system, the cellular and network properties of neurons and how they function within the context of the central and peripheral nervous systems. We will look at autonomic and somatic motor control. Finally, we will cover muscles and the integration of all of the aforementioned systems.

Learning Outcomes: At the end of the module, a student is expected to be able to:

- Describe the structure and function of the various aspects of a cell;
- Explain the fundamental mechanisms underlying cell function.
- Explain how homeostasis is established and maintained in the face of disease and infection
- Demonstrate understanding of the structures and functions of the endocrine system and
- Demonstrate understanding of the structure/function relationship inherent in the central and peripheral nervous systems.
- Describe how the organ systems covered interact throughout the body to maintain homeostasis.

PHYSIOLOGY III **MBSP3631**

NQF: 6
Contact Hours: 3 lecture hours + 2hours of tutorial (or 3 hours of practice)
Credits: 16
Assessment: 60% Continuous assessment 40% Examination (1 x 3 hours written paper + 1½ practical examination)
Pre-requisite: None

Module Description

INTEGRATION OF FUNCTION AND METABOLISM, GROWTH AND AGING*:* This second course in physiology will expose students to the fundamental processes and mechanisms occurring in the remaining organ systems. They will leave the course with an in-depth understanding of cardiovascular physiology, blood flow and how it is regulated and blood. Students will also understand fluid and electrolyte balance as well as gas exchange and transport. These processes obviously integrate numerous organ systems. We will investigate the integration of the respiratory, circulatory and urinary systems and their respective organ components. The remaining organ systems, the digestive, endocrine, immune and reproductive will also be covered and the interconnectivity of all the organ systems considered.

PROFESSIONAL ETHICS

Medical ethics is the cornerstone for the honorable practice of medicine. The philosophy of the School of Medicine is that during the entire MBChB degree program, students are guided and modelled to gain proficiency the tenets of medical practice, conduct on but most importantly on the resolution of moral issues in the holistic care of patients. Thus course on Medical Ethics should be viewed as an invisible strand running through each course of study. Specific units and modules on Medical Ethics build on the University Common Course on Gender, Ethics and HIV. During the course on Sociology of Health and Disease student gain further insight on professional ethics, focusing on doctor/patient relationships as well as principles, of human dignity, equity, social justice and human rights as fundamentals of the healthcare delivery system. In the third year of study, students receive teaching and training on how to make judgment and the decision making process for the health professional. In particular, students examine the four cardinal principles of: respect for **autonomy, beneficence, non-maleficence** and **justice**. In addition students explore issues on **double effect** (conflict between autonomy, beneficence, and non- maleficence), **Codes on Medical ethics and Research**, **end of life decisions**, and **continual learning** as a means to remaining competent in the era of rapidly changing medical practice, genetic engineering and other technologic advances. The course on Medical Ethics is not finite but assists students to develop a personal philosophy for lifelong practice of medicine and ongoing professional growth.

PROFESSIONAL ETHICS I **MCMB3642**

NQF: 6
Contact Hours: 2 lecture hours
Credits: 8
Assessment: 100% Continuous assessment
Pre-requisite: None

Module Description

MEDICAL ETHICS AND PHILOSOPHY: This course is designed to describe the basic principles of professional conduct, ethics, and legal practice in health, with particular emphasis on social values, norms, and culture of the Namibian society. A student will be able to professionally engage in his/her medical practice, observe professional conduct with regard to patients, their families, and professional colleagues, evaluate ethical dilemmas and give professional evidence in a court of law. Topics covered include: basic principles of ethics and philosophy in health; social obligations, values, and norms with the emphasis of the Namibian society regarding health; the patient-physician relationship; common ethical dilemmas:

fundamental ethical guidelines, conflicts between beneficence and autonomy, patients who lack making-decision capacity, decision about life-sustaining interventions, conflicts of interest; basic principles of medico-legal practice, review of the health related Namibian legislative code; forensic pathology: traumatic injuries in forensic medicine, asphyxia of medico-legal interest, sexual abuse, criminal abortion, individual identification; toxins, poisons, venoms, drug overdose; epidemiology, diagnosis, and general principles of treatment of alcoholism and drug dependency; HIV/AIDS; research and ethics; international codes and declarations; Hippocratic and other oaths in medicine.

PSYCHIATRY

The focus of these two modules is on Psychiatry as a branch of medicine concerned with the study and application of bio-psychosocial principles to the etiology, assessment, diagnosis, treatment, rehabilitation and prevention of mental, emotional and behavioral disorders alone or as they coexist with other medical disorders across the life span. Students are trained to fulfill the following roles: *Psychiatric Expert/Clinical Decision Maker* able to conceptualize, understand and apply the diagnostic skills to investigate, elicit, describe and define psychopathological and other clinical findings; apply therapeutic skills to effectively and ethically manage the spectrum of patient care problems diagnosed; apply psychiatric expertise in situations other than in direct patient care; consult effectively; *Communicator* able to establish a therapeutic relationship with patients; elicit and synthesize relevant information from the patient, their care givers and other relevant sources; discuss appropriate information with the patient, their care givers and health professionals that facilitate optimal care. This implies the ability to inform and counsel a patient in a sensitive and respectful manner while fostering understanding the patient's active participation in decisions about their care. *Collaborator* able to effectively consult with other physicians and healthcare professionals; contribute effectively to other interdisciplinary team activities; participate actively in shared decision making with patients and care givers; collaborate effectively with patient and care giving organizations; *Manager* able to allocate limited healthcare resources; manage personal resources; work in a healthcare organization; use information technology to optimize patient care; *Health Advocate* able to identify the determinants of mental disorder as well as the factors that may contribute to positive mental health so as to be able to prevent disorder and promote mental health; identify and address issues and circumstances when advocacy on behalf of patients, professions, or society is necessary; contribute to research and to the development of new knowledge; *Professional* able to deliver the highest quality of professional care; relate to co-workers in a professional manner; practice medicine in an ethically responsible manner that respects medical, legal and professional obligations.

PSYCHIATRY I **MCMY3771**

NQF:	7
Contact Hours:	3 lecture hours + 4 hours of practice
Credits:	16
Assessment:	60% Continuous assessment 40% Examination + pass the Psychiatry component of COBES + pass all practical components of the module. 60% Continuous assessment 40% Examination(1 X 3 hours written paper + 30 minutes viva voce examination)
Pre-requisites:	MBSC1533

Module Description:

DIAGNOSTIC PSYCHIATRY: This module if offered in the 2nd semester of the 3rd academic year and focuses on Psychiatric diagnoses of patients with mental/psychiatric disorders, with a strong (but not exclusive) focus on neuropsychiatry, behavioral neurology and psychopharmacology. Students will apply medical and psychopathological knowledge and procedural skills that are used to collect and interpret data, make appropriate clinical decisions and carry out diagnostic procedures using an appropriate combination of biological, psychological and sociological methods, including up-to-date, ethical and cost-effective clinical practice and effective communication with patients, other health care providers and the community. Students will draw on the competencies included in the roles of communicator, collaborator, health advocate, manager, scholar and professional. Topics include neuropsychiatry and behavioral neurology; psychopharmacology, theories of personality and psychopathology; examination of the psychiatric patient; classification of mental/psychiatric disorders; Students are expected to draw on their already acquired knowledge of the clinical manifestations of mental disorders (clinical psychology), jointly with neuropsychiatry and behavioral neurology, internal medicine, general pharmacology, psychopharmacology and gross and functional anatomy of the brain (including neuro-imaging) to make psychiatric diagnoses. At the end of this module students should be able to perform a psychiatric interview, identify clinical signs of mental disorders, make differential diagnoses, interpret results of diagnostic investigation (including neuropsychiatry and behavioral neurology), explain the psycho-pathology, neuropsychiatry and behavioral neurology of psychiatric disorders, and present this to clinical faculty member(s). Students are expected to complete Junior Clerkship jointly with Internal Medicine (where applicable).

PSYCHIATRY II **MCMY3772**

NQF: 7
Contact Hours: 3 lecture hours + 4 hours of practice
Credits: 16
Assessment: 60% Continuous assessment 40% Examination + pass the Psychiatry component of COBES + pass all practical components of the module. 60% Continuous assessment 40% Examination (1 X 3 hours written paper + 30 minutes viva voce examination)
Pre-requisites: MBSC1533

Module Description:
INTERVENTION, REHABILITATION AND PREVENTIVE PSYCHIATRY: This module if offered in the 2nd semester of the 4th academic year. It focuses on intervention, rehabilitation and prevention regimes used in psychiatric practice. Students will have mastered principles to a range of psychotherapies (e.g., psychoanalysis and psychoanalytic psychotherapy, behavior therapy, group psychotherapy, combined individual and group psychotherapy, family and couple therapy, cognitive therapy, interpersonal psychotherapy, brief psychotherapy, Eriksonian clinical theory and psychiatric treatment, evaluation of psychotherapy), combined psychotherapy and pharmacotherapy, biological therapies, and principles to electroconvulsive therapy and neurosurgical treatments, with applications to special populations such as Primary Health Care settings; psychiatric emergencies; adult and child in- and outpatient psychiatry; geriatric psychiatry; hospice and palliative care; and community psychiatry (including rural settings). Special topics include: consultation liaison psychiatry, adult ambulatory services, substance abuse and addiction services, prevention and public awareness services; and legal and ethical issues in Psychiatry. At the end of this module students should be able to perform a psychiatric interview, identify clinical signs of mental disorders, make differential diagnoses, interpret results of diagnostic investigation, explain the psycho-pathology of mental disorders, develop a treatment, rehabilitation and/or prevention plan and present this to clinical faculty member(s). Students are expected to complete Senior Clerkship jointly with Internal Medicine (where applicable).

SURGERY

This course begins with an introduction to the basic principles of surgery and surgical procedures, both pre-operative and post-operative care, dealing with aseptic techniques, hospital infections, and emergency care and progresses to more advanced modules which review prevention, diagnosis, surgical, and non-surgical management of common conditions and emergencies, including life-saving procedures. Throughout the course students gain practical hands-on experience and skills in the operative care expected of a non-specialist medical practitioner.
This course is offered in four modules during each of year three, four and the final year of study.

SURGERY I **MCMS3752**

NQF: 7
Contact Hours: 3 hours of lecture + 8 hours of practice per week
Credits: 16
Assessment: 60% Continuous assessment 40% Examination (1 X 3 hours written paper + 2 hours clinical + 30 minutes viva voce examination)
Pre-requisite: None

Module Description
GENERAL SURGERY: This is an introductory course to the basic principles of surgery and surgical procedures, both pre-operative and post-operative care, dealing with aseptic techniques, hospital infections, and anesthesia. This course is designed to prepare students to manage common surgical conditions and emergencies, including life-saving procedures. Students will be able to evaluate patients with surgical conditions, explain underlying patho-physiological changes, and identify indications for surgical interventions and need for changing of management or referral of patients; Students should be able to identify indications for intervention and prepare patients for emergency surgery, manage surgical complications, death and bereavement. This course is organized as a clerkship, practical surgical management of simple procedures, assisting in surgical operations, and case presentation in clinico-pathological conferences. Topics covered include principles of surgery; introduction to surgical procedures; anesthesia; emergency surgical conditions of the abdomen, chest and blood vessels; shock, trauma and injury; surgical infection, healing and repair; non-visceral tumors; Students will be able to identify the diagnosis and propose the management of frequent surgical conditions, pre- and post- operative care;

SURGERY II **MCMS3771**

NQF:	7
Contact Hours:	3 hours of lecture + 8 hours of practice per week
Credits:	16
Assessment:	60% Continuous assessment 40% Examination (1 X 3 hours written paper + 2 hours clinical + 30 minutes viva voce examination)
Pre-requisite:	None

Module Description

ORTHOPAEDICS AND TRAUMATOLOGY: This course reviews prevention, diagnosis, surgical, and non-surgical management of common conditions affecting bones, connective tissues, and joints. Students should be able to assess orthopaedic health conditions through medical interviews and clinical examination of a patient, select and request for appropriate diagnostic investigation, interpret findings, explain the underlying pathology, and outline a management plan of the case. Topics covered include clinical approach to articular and musculoskeletal disorders; interview and physical examination of patients; radiographic anatomy; diagnosis, treatment, rehabilitation, and prevention of traumatic and non-traumatic musculoskeletal disorders; underlying patho-physiological mechanisms; multiple injury and response to trauma; complications of traumatic lesions; external and internal immobilization methods; foreign body; snake and insect bites.

SURGERY III **MCMS3772**

NQF:	7
Contact Hours:	3 hours of lecture + 8 hours of practice per week
Credits:	16
Assessment:	60% Continuous assessment 40% Examination (1 X 3 hours written paper + 2 hours clinical + 30 minutes viva voce examination)
Pre-requisite:	None

Module Description

Urology, **OTORHINOLARYNGOLOGY AND ORAL HEALTH**: This module is offered in three units:

Otorhinolaryngology and Oral Health - This course discusses diseases of the head and neck regions where some of the most common infectious diseases encountered by internists and other primary care physicians are found. Although these infections are usually mild enough to be treated on an outpatient basis, the student has to recognize the serious complications that may arise from such diseases and therefore identification and treatment of these potentially life-threatening infections of the head and neck are crucial. At the end of the course, students should be able to recognize diseases affecting the head and neck, develop differential diagnoses, select appropriate diagnostic tests, interpret test results, and develop a treatment and disease prevention plan, as well as carryout live-saving and emergency procedures involving ENT conditions under supervision. Topics covered include: congenital ENT conditions, nasal haemorrhagic syndrome (epistaxis), nasal obstructive syndrome (sinusitis, foreign bodies, injury), nasal tumors, infections of the oral cavity and pharynx (adenoiditis, tonsillitis, pharyngitis), airway obstruction syndrome (laryngitis, croup, and epiglottitis), afflictions of vocal cords, neck tumors, ear and mastoid infections (auricular cellulitis, perichondritis, otitis externa, otitis media, mastoiditis), hypoacusia, vertiginous syndrome, oral pathology and dental health problem, including the diagnosis and their management.

Ophthalmology:- This course discusses the structure, function, diseases, and basic remedies of the eye. Students should be able to examine the eye, carryout tests for visual acuity and color, diagnose diseases of the eye and ocular manifestations of systemic diseases as well as carryout simple treatment procedures under supervision, or follow proper referral procedures. Topics covered include: anatomy and physiology of the eyeball, socket, and visual pathways; signs and symptoms of primary eye diseases; congenital, immunological, inflammatory, and infectious diseases of the eye; eye trauma and foreign bodies; neoplasia; causes, diagnosis, and treatment of progressive loss of vision; causes, diagnosis, and treatment of sudden visual loss; haemorrhages; alterations of the eyeballs position; ocular complications of systemic diseases; exploration of the ophthalmic patients; minor eye surgery; blindness prevention; Tests for visual acuity and colour; imaging for eye investigations.

Urology: This course discusses the structure, function, diseases, and basic remedies of the male uro-genital system. Students should be able to identify disorders affecting the urological system, select diagnostic investigations and interpret results as well as implement the necessary interventions. Topics covered include symptoms and signs urological conditions at different age groups; congenital malformations; internal and external urological malformations; urinary tract infections; nephrolithiasis; low urinary tract obstruction; genital tumors; voiding dysfunction, prostate diseases, incontinence, impotence and male infertility. During the course students will be required to participate in the management of patients with urological problems and their complications.

SURGERY IV **MCMS3870**

NQF:	7
Contact Hours:	3 hours of lecture + 8 hours of practice per week
Credits:	32
Assessment:	60% Continuous assessment 40% Examination (1 X 3 hours written paper + 2 hours clinical + 30 minutes viva voce examination)
Pre-requisite:	None

Module Description

SENIOR CLERKSHIP: This course enables students to practice surgical care of patients and, under the supervision of a specialist in surgery, gain hands-on-experience in general surgery, including performing selected operations and rehabilitation of individual patients of all ages, their families, and population groups in a health facility, household, or community. At the end of the course, a student will be able to independently conduct a professional interview and physical examination of a patient, suspect the presence of surgically treatable condition(s), propose emergency care plan and cost-effective investigative plan to confirm the diagnosis; propose a safe and effective surgical management plan, prepare patient for theatre, including arranging for anaesthetic pre-operative consultation; participate as second assistant during major operations, and perform under supervision the surgical procedures in the student practical skills log. The student acquires practical skills in the evaluation of the epidemiology, pathogenesis, preclinical and clinical manifestations of communicable, non-communicable, and tropical diseases of surgical importance that are prevalent in Namibia and neighbouring countries, surgical emergencies affecting the head, eye, ear, mouth, neck, chest, abdomen, pelvis, bones, and other body organs and tissues and their management, injury, and metabolic response to trauma. Students gain experience in evidence-based practice of surgery, choice, use, and administration of all forms of anaesthetics, invasive and non-invasive diagnostic and therapeutic procedures, cost-effective and rational use of drugs, surgical and non-surgical interventions, laboratory investigations, screening for disease markers, disease prevention, health promotion and rehabilitation, population and group health, ethics and gate-keeping role of physicians, health resource allocation and management, and health systems research in surgery.